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Texas Extends Oil Law Without Change

AUSTIN, Tex., April 3. — The Texas House has approved and sent to the Senate the bill extending that state's oil and gas conservation laws for another two years. An unsuccessful attempt was made to tie an amendment on the House bill which would give the Texas Railroad Commission power to regulate refineries. As passed only one section of the law now on the statute books would be amended, to provide for extension until Sept. 1, 1941.

'Hot' Oil Bill Goes To Cole Committee

WASHINGTON, April 3. — Already passed by the Senate, the Connally-Dies proposal to make permanent the "hot" oil act, has been referred in the House to the "Cole oil subcommittee" of the Interstate Commerce committee, for hearings.

It is not likely that any action looking toward a hearing date will be taken for at least a week. The subcommittee has not indicated that it will hold hearings, although it is felt that hearings will be held.

Rep. Herron Pearson, Tenn., has been named a member of the subcommittee to take the place of former Rep. Samuel B. Pettengill, Ind., who did not run for the present session of Congress. Other members of the subcommittee, the same as when it conducted the Congressional oil investigation in 1934, are Reps. Cole, Md., Chairman, Kelly, Ill., Wolverton, N. J., and Mapes, Mich.

Extending 'Gas' Tax Is 'Desirable'—FDR

WASHINGTON, April 3. — Senate Leader Alben Barkley (Ky.) has been informed by President Roosevelt that continuation of all federal excise taxes expiring June 30 is "desirable." These include the gasoline, lubricating oil and pipeline transportation taxes.

An effort is being made at this session to have the lubricating oil taxes clipped from the list, on the basis that they hinder industrial expansion.

Los Angeles Jury Convicts Operator Under Price Law

N. P. N. News Bureau

LOS ANGELES, April 1.— The first actual court test on Section 11-A of the California Oil and Gasoline Substitution Act, which requires gasoline resellers to post the "actual total price" at which they offer to sell, resulted in a jury verdict of guilty on March 31, and a sentence of a $5 fine which was paid by the defendant, a Los Angeles service station operator.

During the trial the court said the prosecution in this case was not a charge that the station operator had discriminated between one customer and another, but was merely a question of whether the "actual selling" price had been posted on dispensing equipment at the station.

The defendant admitted selling to certain customers at a price of 16 cents a gallon, when the posted price was 18 cents, but explained this by saying his rebates to the customers were in the form of a "gift." He also said he had some "commercial" accounts to which he sold 18-cent gasoline at a two-cent discount. A "commercial" customer was described as anyone buying 20 or more gallons a week.

The owner of the station— not the defendant — testified that Gilmore Oil Co., the supplier in this case had stipulated the retail price at which its branded products must be sold under provisions of the California fair trade law and would refuse to sell him gasoline if he posted a lower price.

The court said the law was unjust in that it allowed oil marketing companies to give a commercial discount on purchases as small as 50 gallons, as pointed out by defense counsel.

Other cases, in which station operators also entered pleas of not guilty, will be held during the coming week.

Bills to Limit Tank Trucks Are Making Little Headway

CLEVELAND, April 3.—Bills to limit the amount of inflammable petroleum products which may be transported over highways, and others prohibiting transportation of inflammables on the highways on Sundays and holidays, so far have made little progress in most states during the 1939 legislative sessions.

Twenty nine such truck regulatory bills have been introduced in Arizona, Arkansas, California, Colorado, Connecticut, Georgia, Iowa, Illinois, Kansas, Minnesota, Missouri, Nebraska, North Carolina, North Dakota, South Dakota, Washington, Michigan and West Virginia.

Of these bills, only two, South Dakota HB-56 and West Virginia HB-257 has passed both houses of the legislature. But the West Virginia bill, which became law without governor's approval, was amended to apply only to explosives, not to "inflammable liquids."

The South Dakota bill limits the transportation of oil and gasoline to 1500 gallons per load. Before passage the bill was amended to give the Public Service Commission right to grant permits for hauling loads greater than 1500 gallons to non-railroad points, and to suspend the act to serve the needs of any industry upon a showing that safety provisions have been complied with.

Bills in Arizona, Arkansas, North Dakota, Washington, and three in Georgia have either died with adjournment, or have been killed in committee. The

(*Continued on page* 14)

See NPN's Oil Transportation News for other developments concerning trucks pipelines, barges and railroad freight rates, Pages 13-15.

Supreme Court Grants Appeal On 'Depletion'

N. P. N. News Bureau

WASHINGTON, April 4.— U. S. supreme court has granted reviews of three circuit court decisions which held that in tax returns of oil companies, development expenses should not be deducted from gross income in arriving at net income for purpose of determining depletion allowance.

Disallowance of a large item for development expense, of course, would decrease the allowance for depletion, which is limited by law to 50 per cent of net income.

Companies involved were Wilshire Oil Co. Inc., Bandini Petroleum Co., and Wilshire Annex Oil Co., all of Los Angeles.

Lower court rulings permitted them to deduct development costs from gross income in arriving at taxable income, but in determining net income for the specific purpose of fixing the depletion allowance it held that development expenses should not be deducted.

The government told the high court that there are more than 100 cases now pending before the board of tax appeals presenting this same issue.

Texas Order Enjoined

HOUSTON, Tex., April 4.— Federal court here this afternoon granted an injunction against Texas Railroad Commission's allowable order for April, as requested by two producers charging two allowable orders so far issued were "arbitrary and confiscatory." The injunctions apply only to properties of these two operators in five Gulf Coastal fields. Petitioners asked that a three-judge court hear plea for permanent injunction.

Meanwhile, reports from Austin indicated Texas commission's office was besieged by operators and their legal representatives protesting the new order. More injunction suits are expected.

(Background of the Texas situation is given in earlier story on Page 17).

Wage-Hour Law's Provisions Cover Employes of Co-ops.

N. P. N. News Bureau

WASHINGTON, April 3.—Employes of farmers' co-operative associations in interstate commerce are not exempt from the wage-hour provisions of the Fair Labor Standards (Wage-Hour) Act because of the co-operative nature of their employer or because of the fact that the employer is an association composed of farmers, General Counsel Magruder of the Wage-Hour Division has ruled.

Of course, if their work is purely agricultural, they will come under the agricultural workers' exemption of the law, but employes of a farmers co-operative are not, Magruder ruled, engaged in "any practices performed by a farmer as an incident to or in connection with" farming operations. Presumably, employes of a co-operative oil company would come under this ruling.

Co-ops, the division said "are distinct, separate entities from the farmers who own or compose them. The work performed by a farmers co-operative is not work performed by a farmer, but for farmers. The legislative history of the act supports this interpretation."

* * *

New Wage-Hour Bill Exempts 'Over $200'

N. P. N. News Bureau

WASHINGTON, April 3. — Two similar bills have been introduced in Congress to amend the wage-hour law—both with the blessing of Wage-Hour Administrator Andrews.

Among other things, the bills would exempt so-called "white collar workers" from the provisions of the bill if they earn $200 a month or more.

Innocent purchasers of goods produced in violation of the act also would be protected, as well as employers who act under regulations laid down by the administrator which are later invalidated by the courts.

Independent Oil Man Hits 'Self-Government' Proposal

N. P. N. News Bureau

CLEVELAND, April 3. — Proposal of Wiley Moore, Atlanta oil man, that Congress should enact legislation permitting two-thirds of the members of any industry to work out a "constructive business program" and adhere to it without risking civil or criminal prosecution, has drawn fire from one of the country's most prominent oil jobbers. Moore's proposal, which was contained in a letter addressed to Secretary of Commerce Hopkins, was the subject of an article in NPN of March 22, Page 6.

This independent marketer, who asks that his name be withheld from publication, cites his experience under the NRA oil code as his reasons for opposing Moore's plan. Moore is president of Wofford Oil Co., subsidiary of Pure Oil Co.

Text of this jobber's letter, addressed to NPN's editor, follows:

"Sorry to say but am afraid we have reached the stage where we want to say something but would prefer our name left out.

"Wiley Moore's letter in NATIONAL PETROLEUM NEWS (March 22) is what brings us to our feet.

"Based on experiences we had during the NRA Code days I am thoroughly convinced that the major oil companies got a more monopolistic control of the oil industry then than at any other time in history. They practically made the code, they made the interpretation to suit themselves and when the interpretation did not suit and their policy was in conflict with the code, they were willing to dicker back and forth or wait for somebody to take them into the courts.

"Mr. Moore says when two-thirds of the members of an industry work out a constructive business program that it will be applicable to one hundred per cent of the industry. Are the major companies to decide what practices are to be used? Will they be the interpreter for two-thirds of the member industry? Is he talking about corporate individuals or corporate assets?

"Who has the most at stake in the affairs and administration of a business, the individual who has his home, his all invested in the business which is situated in the community in which he lives or some outside foreigner sent in to carry out the dictates of a brass hat in New York? Is the latter or the former a man more capable of deciding and judging what is best for business in general and what is fair and equitable for all concerned?

"Whether we have definitely reached this conclusion as yet—please don't make me decide now, but we feel that the courts can decide just as easily now the damnable practices that are going on within the industry. We need no code, for neither laws nor codes have made conniving men tolerant; only the fear of the law and their being caught and shown up has restrained men from doing the unethical.

"If those injured in business would begin to air in the local courts the unethical and conniving schemes used by men in our industry it would not be long before the practices would be stopped.

"Therefore, it is our belief that our only resort is to the courts for that is ultimately where any code or agreement will end up.

"How many times during the code days have I sat as a member of the code committee and practically the whole committee complained against one of the major oil companies. Did he correct his way? No! I bet it will be this way eventually with any code or agreement you make so let's not fool ourselves. If we feel wronged we may as well start in the courts in the beginning."

New Line from KMA Reported in Making

WICHITA FALLS, Tex., April 3.—Sinclair Refining Co.'s pipeline department is reported surveying right-of-way for a new 6-inch crude line from the KMA field near here. Line would connect with company's trunk line between Texas and Oklahoma points, and would have a capacity of 9000 barrels daily.

The KMA field has been handicapped in recent months by lack of sufficient pipeline capacity to take all the allowable production and a number of wells have been without market outlet. Pipeline proration was in effect for a time but was lifted early in the year except for one company which was not able to step up its takings due to small size of its line, used only to transport crude to its refinery at Wichita Falls, Tex.

40 Poly Plants Now Operating

By Telegraph

BALTIMORE, April 4.—Polymerization of refinery still gases formerly burned under stills as fuel now is saving 100,000 barrels of crude petroleum every year for the nation Dr. Gustav Egloff of Universal Oil Products Co., told the American Chemical Society here today.

There are now 40 polymerization plants in operation, he said. Most of these are using catalytic methods to recover from 2000 to 100,000 gallons daily of polymer gasoline. This new material increases the nation's gasoline yield from 6 to 12 per cent Egloff stated.

Alkylation Methods

The application of alkylation methods to making super motor and aviation fuels is now being done on a commercial scale both in the United States and abroad. A. E. Dunstan, research director for Anglo-Iranian Oil Co., London, told the chemists how this process has been applied to making 90-100 octane number fuels in England.

This meeting is the most heavily attended in the history of the petroleum division of the American Chemical Society. Today about 850 were in attendance as the catalytic symposium began. The program includes the largest group of papers ever assembled for one meeting on chemical methods of oil refining.

WASHINGTON, April 3. — "The Future of Power and Fuel" is to be discussed at the 27th annual meeting of the United States Chamber of Commerce here May 1-4.

Pipe Illinois Crude East

By Teletype

NEW YORK, April 4.—Socony-Vacuum Oil Company will build a 10-inch, 360 mile pipeline from Wood River, Illinois to Lima, Ohio, the company has announced.

The line will carry Illinois crude from the company's production in the Illinois Basin, and also Mid-Continent crude, to refineries at Trenton (Detroit), Michigan and Buffalo, N. Y.

From Lima to Trenton and Buffalo, existing pipeline facilities will be used.

Iowa 'Chain' Bill would Tax Bulk Plants, not Stations

DES MOINES, April 3.—A new chain store tax bill is now before the Iowa Senate that exempts bulk plants doing 95 per cent of their business in petroleum products from the tax, but includes service stations as chains.

The bill, Senate Bill 456, is now on call, and may come before the Senate for third and final reading early this week.

The bill is a measure written by a special senate committee when proponents of the "Louisiana" chain store tax bill and a fair trade bill became deadlocked. The special committee reported the bill March 27, and the Senate promptly passed it on first and second reading.

As originally drafted the bill's definition of chain store exempted the oil industry's service stations and bulk plants, along with co-operatives, hotels and rooming houses, liquor stores, the coal, grain, feed and ice industries.

Amendments passed, up to the end of last week's session, included service stations in the definition of chains, but exempt bulk plants having 95 per cent or more of their business in petroleum products.

Tax rates in the bill start with $25 per store in chains of two to 21 units, to a top of $500 per store for chains of 100 units or more. For computing the tax only chain stores within Iowa are counted. The "Louisiana" chain store tax bill, still in the sifting committee, applied the tax rate only to chain stores within Iowa, but to determine the tax bracket counted all of the "chain's" stores in the entire country.

Lobby activities by the state organization of independents in all lines of business produced three "Marches on the capitol" to support the "Louisiana" chain store bill, sponsored by the state organization. The first march about four weeks ago found about 600 merchants lobbying in the senate. The second march brought about 300 to the capitol, and the third march a week ago resulted in about 50 independents, including several oil men, working for the bill.

Efforts of independent merchants to lobby for the "Louisiana" bill caused several members of the Senate, who are independent merchants, to rise on the floor and rebuke such lobbying.

When proponents of the "Louisiana" chain store tax bill, Senate Bill 17, and the fair trade law bill, Senate Bill 222, became deadlocked the lieutenant-governor a week ago appointed a special committee to work out a new bill. Three authors of Senate Bill 17 and three of Senate Bill 222 were appointed to the special committee, with a neutral seventh member.

The new bill, Senate Bill 456, also prohibits advertising of loss leaders.

Iowa became famous for its original chain store tax bill in 1935, that taxed chains on the number of units and also on gross profits, through oil companies leasing their company operated service stations. Station leasing spread a year later to other states, giving the industry its present Dealer Marketing Plan. Indiana was the first state to enact a chain store tax law, in 1929, but Iowa's law brought on the lessee operation of service stations.

Wisconsin Bills Ban Oil Trading Stamps

MADISON, April 3. — The trading stamp issue is now before the current Wisconsin legislature. Two bills have been passed by the Senate and now are in the Assembly.

One bill, (Senate 223), prohibits the giving of trading stamps or tokens with the sale of gasoline. This bill would not prohibit issuance of stamps with the sale of motor oil, lubrication service or accessories.

The other bill, (Senate 126), would prohibit giving stamps with the sale of merchandise on which a minimum price is fixed by the manufacturer or distributor where the value of the stamps reduces the consumer price below the designated minimum price. This would not affect the giving of stamps on which a minimum price is not fixed. On fixed priced goods the value of the stamps would have to be added to the minimum price. In Wisconsin stamps are redeemable only in cash.

Representatives of the Milwaukee county gasoline dealers association appeared in favor of both bills at hearings. There was no opposition at the senate hearing on the bill to prohibit giving of stamps on gasoline sales.

NPN's Log ON OIL LEGISLATION

Summarized oil legislative information below is based on reports received at Cleveland from Washington and state legislatures, which are deemed reliable although NATIONAL PETROLEUM NEWS assumes no responsibility for accuracy or completeness of this information.

Congress

SENATE BILLS

US SB-1970, LaFollette, Wisconsin.
To eliminate use of labor spies, strikebreakers, etc., and other "oppressive labor practices." Education and Labor Committee.

US SB-2005, Byrd, Virginia.
Providing for a survey of proposed auto-truck tunnels under the Potomac River. Public Building & Grounds Committee.

US SB-2009, Wheeler, Montana, and Truman, Missouri.
To amend the Interstate Commerce Act by extending its application to additional types of transportation. Interstate Commerce Committee.

US SB-2013, Capper, Kansas.
To amend the D. C. code to provide for organization and regulation of co-operative associations. District of Columbia Committee.

HOUSE BILLS

US HB-5447, Disney, Oklahoma.
Authorizing President to invite states of the union and foreign nations to participate in international petroleum exposition at Tulsa, May 18-25, 1940. Foreign Affairs Committee.

US HB-5435, Norton, New Jersey.
To amend the wage-hour law, exempting persons earning more than $200 per month, and otherwise. Labor Committee.

US HB-5412, Lea, California.
To encourage travel in the United States. Interstate Commerce Committee.

US SB-2008, Thomas, Utah.
To amend the wage-hour law exempting "white collar" workers, and otherwise. Education and Labor Committee.

US SB-2028, Frazier, North Dakota.
Creating a commission to study proposals for a national system of express motorways. Post Offices and Post Roads Committee.

US SB-2043, Thomas, Oklahoma.
Authorizing the President to invite the states of the Union and foreign countries to participate in the International Petroleum Exposition at Tulsa, Oklahoma, May 18-25, 1940. Foreign Relations Committee.

State Legislatures

Bills Introduced

ILLINOIS

HB-563, Powell.
Prohibits any red sign or light within 100 feet of any state highway, except in municipalities of over 10,000 population. To Motor Vehicle Committee.

HB-598, Mioduski.
Prohibits use of tetraethyl lead in motor fuel for vehicle use. To Motor Vehicles Committee.

SB-255, Burgess.
Regulates transportation, storage and purchase of petroleum and petroleum products. Referred to Oil & Gas Committee.

RHODE ISLAND

HB-888, Magee.
Providing that one-third of gasoline tax receipts be used for relief. To Finance Committee.

HB-876, Brayton.
Regulating the use of highways by motor vehicles transporting property for hire. To Judiciary Committee.

HB-877, Tordoff.
Exempting fish and agriculture industries from gasoline tax. To Finance Committee.

HB-808, Romano.
Making it unlawful to sell or offer for sale kerosine in any business establisment where foods are displayed or sold. To Judiciary Committee.

SB-206, Simmons.
Relating to display of motor fuel price signs. Regulates price fixing, marking labels and tax price. To Judiciary Committee.

IOWA

SB-456, Special Chain Store Tax Committee.
Compromise chain store tax, ranging from $25 to $500 per store. Also taxes merchandise based on annual inventory of Jan. 1.

KANSAS

HB-619, Roads and Highways Committee.
General stiffening of gasoline tax laws. Licenses manufacturers and importers. Requires producers file reports. Passed House.

HB-27, Wood.
Providing for "exemption permit" form of gasoline tax refund on gasoline used for other than highway propulsion of vehicles. Passed Senate, now before Governor.

HB-223.
Labelling of gasoline pumps. Died in committee.

SB-422.
To prevent waste of natural gas. Passed Senate.

MAINE

HB-1983.
Provides for disposition of moneys from tax on gasoline purchased for use in internal combustion engines.

MICHIGAN

SB-275, Paterson.
To regulate and prescribe the requirements of gasoline. To Agriculture Committee.

HB-482, Kilstrom.
To regulate transportation of explosives, inflammable liquids upon public highways. To Transportation Committee.

SB-331, Hittle.
To regulate the sale of gasoline and motor oil. To State Affairs Committee.

MINNESOTA

HB-1390, Antila.
Relating to chain store tax and eliminating provision that tax not

be collected after 1940. To Taxes Committee.

HB-1430, Hartkoff.

All gasoline used as motor fuel to contain 10 per cent alcohol made from Minnesota products. Commissioner of agriculture may change percentage if insufficient alcohol available.

NEW HAMPSHIRE

HB-350, Committee on rules.

Provides for refunds of gasoline tax for non-highway use. To Ways and Means Committee.

NEW JERSEY

SB-281, Scott.

Regulating tourist and trailer camps and overnight lodging places. Exempts licensed hotels. To Highways Committee.

NEW YORK

HB-1540.

Amends law relative to filing of statements by pipeline companies.

HB-2177, Glancy.

Requires operators of trucks carrying more than 4000 lbs. to obtain special license and undergo examination as to ability to read and write, traffic laws, mechanical knowledge of vehicle, eyesight and hearing. To Rules Committee.

NORTH CAROLINA

HB-676.

Providing for inspection of petroleum products. To second reading in Senate.

HB-681, Mallard.

Trucks prohibited from transporting more than 3500 gallons of petroleum products. Reported unfavorably by House. Judiciary Committee.

SB-113.

Regulating flat truck loads. Ratified.

SB-338, Umstead.

Prohibits any person who is engaged in both wholesale and retail business from selling at retail as low as he sells at wholesale in the same locality. To Judiciary Committee.

OKLAHOMA

HB-607, Blumhagen.

Appropriating $5000 for preparation of brief in rate litigation before interstate commerce commission. To Appropriations Committee.

HB-616, Basolo.

Providing for regulating storage of liquefied gas. To Calendar.

HB-573, Revenue & Taxation Committee.

Levying 4 per cent gross revenue tax on freight cars operated in state by other than public service companies.

HB-599, Holliman.

Appropriating $15,000 for maintenance of national guard troops in Tulsa strike area.

H. J. Res-25, Hammond.

Submitting constitutional amendment relating to transaction tax.

H. J. Res-24, Sweeney.

Asking governor to call special session of legislature.

PENNSYLVANIA

H. Res-45, Harkins.

Relating to use and cost of natural gas. To Public Utilities Committee.

HB-759, Foor.

Change maximum gross weight of class "U" vehicles to 15,000 lbs., instead of 13,000 lbs.

HB-754, Terry.

Amends law to prohibit carrying of gasoline in other than standard gas tanks.

HB-885, Woodside.

Transfers $3,885,000 from motor license fund to general fund and providing for return of same.

VERMONT

SB-69.

Requiring trucks delivering gasoline, kerosine and fuel oil to install sales ticket devices. To Judiciary in House.

MICHIGAN INVITES

Oil Jobbers, Equipment Manufacturers and Refinery Representatives to attend the

ANNUAL MEETING AND TRADE EXHIBIT

of the

Michigan Petroleum Association

April 11-12, 1939

Detroit-Leland Hotel, Detroit

An outstanding exhibit of petroleum marketing equipment, with 30 companies expected to exhibit their products.

Meetings will be held in the afternoon of each day and will cover subjects of vital interest to Michigan oil jobbers.

This advertisement is carried by National Petroleum News with the best wishes for a successful convention—Editor

CHANGED STATUS

CALIFORNIA

HB-12. Permits persons to haul 500 gallons of fuel without restrictions. Present limit is 200 gallons. Passed House, to Revenue Committee in Senate.

ARKANSAS

HB-483. Regulating containers of liquefied petroleum gases. Return requested by Senate and granted.

SB-488. Changes automobile registration date from November 1, to December 1. Passed House.

SB-488. Motor vehicle registration date changed to December 3, from November 1. Passed House.

HB-60. Changing gasoline tax rate in border zones. Killed by veto.

SB-317. Relating to the payment of oil royalties. Approved.

CALIFORNIA

HB-1926. Creating oil conservation commission. Recommitted to oil industries committee in House. Hearings begin March 21.

CONNECTICUT

HB-993. Tax paid on gasoline used for non-highway purposes may be refunded. Passed Senate.

HB-993. Allows refunds of gasoline tax for non-highway purposes. Passed House.

HB-1473. Increasing gross weight of commercial vehicles. Unfavorably reported and killed in House.

HB-571. Price posting bill, providing licenses for distributors. Unfavorably reported and killed in House.

SB-482. Chain store license, filling stations not exempt. Unfavorably reported and killed in Senate.

DELAWARE

HB-44. Defers registration date to April 1. Passed House, favorably reported in Senate.

GEORGIA

HB-213. Makes motor vehicle carriers within radius of 10 miles of railroads common carriers. Vetoed.

KANSAS

HB-196, Rieggel. Outlaws transportation over city streets of more than 1000 gallons of gasoline or other motor fuel. Reported unfavorably by House committee.

HB-223. Requires labelling of all pumps with brand name or words "no brand." Passed in House.

HB-76. Collection of gasoline tax on over 20 gallons in trucks entering state. Passed in Senate.

HB-619. General stiffening of state gasoline tax. Licenses manufacturers and importers. Favorably reported in Senate.

MARYLAND

HB-314. Fair trade act. Includes dispensing equipment from which unmarked products are sold. Passed Senate.

HB-836. Increasing license fees of garages. Passed House.

HB-673. Retail price posting bill. Amended in House. To second reading in House.

MASSACHUSETTS

HB-1284. Repeals 1c emergency gasoline tax. Unfavorably reported in Senate.

MINNESOTA

HB-1123. Memorializing Congress to enact Patman chain store bill. Favorably reported in House.

NEW YORK

HB-1540. Concerning statements by pipeline companies. Passed Senate.

NEW JERSEY

SB-151. Price-posting law. Amended in House.

SB-152. Provides for revocation of dealer licenses. Amended in House.

NORTH CAROLINA

SB-453. Prohibits Sunday sales of gasoline in Leakesville Township between 9 a.m. and 1 a.m. Approved.

OKLAHOMA

HB-448. Providing motor carrier regulations. To Calendar in House.

HB-415. Defines term "agricultural purposes" for gasoline tax exemptions. Passed House. To Oil & Gas Committee in Senate.

HB-503. Levying a 4-cent excise tax on diesel fuels and liquefied gases used in vehicle propulsion on state highways. Passed Senate.

HB-573. Relating to taxation of freight cars used in intrastate traffic other than by public service committee. To special committee for re-drafting.

SB-485. Levying 4c excise tax on diesel fuels and liquefied gases used in vehicle propulsion on state highways. Passed Senate.

S C Res.-5. Memorializing Congress to increase federal gasoline tax and return additional funds to oil producing states. Passed Senate.

RHODE ISLAND

HB-559. Deferring automobile registration to April 1. Favorably reported in House.

TEXAS

H J Res-16. Transaction tax. Killed in House.

BILLS APPROVED

CONNECTICUT

SB-800. Requires approval of local authorities to obtain license to locate filling stations. Approved.

GEORGIA

HB-739. Gives Camden County authority to regulate zoning along highways. Approved.

KANSAS

SB-185. Authorizing state corporation commission to determine reasonable market demand for crude and allocate to pools without discrimination or waste. Exempts wells making 15 barrels daily or less. Approved.

NEBRASKA

Bill No. 483. Provides that refineries, pipelines and barge terminals shall not be considered dealers for fuel taxing purposes. Approved.

NORTH CAROLINA

HB-654. Exempts franchise carriers from provisions of act for inspection of gasoline and kerosine. Approved.

OREGON

SB-480. Restricts maximum individual wheel weight to 9000 lbs., maximum single axle weight to 18,000 lbs. Approved.

VERMONT

HB-198. Increases registration fees for certain class trucks and trailers. Increases weight allowance from 25,000 to 28,000 lbs. for single truck. Approved.

FINAL REPORTS

New Mexico

Convened Jan. 10—Adjourned March 11

BILLS ENACTED

HB-249. Provides that any person wanting a refund shall obtain a permit to obtain refunds before buying the fuel.

SB-14. Provides for registration on March 1st instead of January 1st.

SB-142. Appropriates $15,000,000 for highway debentures and construction.

SJM-5. Memorializes Congress to pass H. R. 2662 extending certain oil and gas prospecting permits.

SB-76. Provides for New Mexico's participation in Interstate Oil Compact for 2 years from September 1, 1939.

HB-76. Redefines the word "use"

so as to include storage, with amendment to take care of existing gasoline stocks and refinery storage.

HB-248. Grants a flat allowance of 2% of the net taxable gallonage to cover evaporation, shrinkage and losses resulting from unknown causes, irrespective of the actual amount thereof. Provides for a refund of the tax paid on motor fuel destroyed by fire or accident while still in the ownership or custody of the wholesaler or distributor. Reduces the tax rate upon users of petroleum products, other than motor fuel, for the generation of power to propel motor vehicles on the highways, from 7½c per gallon to 5c. It is expressly provided that this tax shall apply to liquefied gases composed of propane, propylene, butane, butylene, and diesel fuel.

HB-254. Requires retail dealers to post on each pump or other dispensing equipment a sign stating the price per gallon of motor fuel. All taxes shall be included in the price so posted and the sign shall contain a statement of the amount of taxes included, or, without specifying the amount, a statement that taxes are included. Posted prices must remain in force 24 hours and sales below such price are prohibited as are sales below net cost to retail dealer plus all selling expenses. Prohibits misbranding and substitution.

SB-182. Provides for a use tax to supplement the sales tax. Specifically exempts gasoline or motor fuel on which a tax for the sale or use thereof is imposed by the laws of the state.

HB-21. Extends reciprocity to non-resident agents or representatives traveling into the state for the sole purpose of supervising or consulting with local agents or representatives of the business concern by whom they are employed.

HB-288. Provides for the issuance of $6,000,000 in highway debentures.

SB-116. Establishes a field division of the state police to enforce port-of-entry and mileage tax laws.

HB-174. Provides that oil and gas leases shall continue as long as oil or gas is being produced in commercial quantities.

SB-69. Authorizes the Department of Health to regulate containers for the storage and handling of liquefied gases.

SB-121. Provides that oil and gas leases of lands belonging to the State of New Mexico shall remain in full force and effect as long as oil and gas is produced on paying quantities.

Bills Which Did Not Pass

SB-130. To impose a tax of 2½ mills per barrel upon all oil and ¼ mill per thousand cubic feet upon all gas, produced in the state. The present provision imposes a tax of ⅛ of 1% on the proceeds of all oil and gas produced in the state. Would also provide for a state proration officer.

S. J. Res. 8

Anti-diversion constitutional amendment.

SB-101. To authorize counties wherein municipalities have assessed a municipal gasoline tax to impose a license tax upon gasoline and motor fuel sold outside of the limits of any municipality within the county limits. Such tax would not exceed 1c per gallon.

Motor Vehicles and Highways

HB-71. To provide that commercial carriers as defined (private trucks transporting loads of more than 1,000 lbs. and operating beyond a radius of 25 miles from an established place of business of their owner, excepting certain farm trucks) shall pay a filing fee of $5 and obtain a permit from the state. Such trucks to pay graduated mileage fees. Trailers and semi-trailers are considered separate vehicles.

HB-142. To provide for the regulation of common and contract carriers by the Corporation Commission of New Mexico.

HB-28. To establish minimum wage and maximum hour standards.

SB-107. To provide that the non-ratable purchase of oil or gas in any field shall constitute waste.

Washington

(Legislature Adjourned March 10.)

Bills Enacted

HB-87. Provides that compensating tax shall apply regardless of whether personal property to be used in state is manufactured within state; by amending definition of word "use"; and by adding three sections which provide that taxpayers, in making their returns, may offset amount of tax previously paid, which has been declared uncollectible by Supreme Court, against amount of tax owned by them. Approved, effective immediately.

HB-259. Permits distributor to deduct 1 per cent of net gallonage otherwise taxable on account of losses sustained through evaporation and handling; permits tax free sales between licensed distributors; and broadens definition of "distributor."

SB-227. Levies a tax of 0.25 cent per gallon upon "petroleum products"—all derivatives of crude petroleum or crude oil, except gasoline, medicinal oils, wax or lubricating oils (including liquid or liquefiable crude petroleum derivatives) and repeals 0.25 cent per gallon tax on fuel oil. Distributor required to furnish a bond of not less than $1,000 nor more than $50,000 and obtain an annual license at a fee of $10.

SB-113. Would specifically exempt from compensating tax motor vehicle fuel upon which the state tax of five cents a gallon imposed upon chapter 58, laws of 1933, and amendments thereto has been paid and not refunded. Amends provision exempting sales of gasoline from the sales tax by newly providing that where the gasoline tax is to be refunded, the amount of the sales tax shall first be deducted.

Bills Which Did Not Become Law

HB-567. To provide that all liquid petroleum fuels used in internal combustion engines on all motor cars shall be blended with a given percentage of alcohol distilled from products grown or produced in the state. The percentage of ethyl alcohol blended shall be set and determined according to sliding scale over a period of years as fixed in the bill. Also provides for a sliding scale reduction of the motor fuel tax.

HB-552. To provide that state treasurer shall credit to general obligation bonds of 1939 retirement fund out of motor vehicle fund, monthly, a sum equivalent to 4/10 of 1 cent of the tax on each gallon of liquid fuel payable into motor vehicle fund. Purpose of bonds is to raise money for social security.

HB-160. Chain store tax. No exemption for outlets of petroleum products. Rates graduated from $1 for a single store to $500 for each store in excess of 19.

HB-301. Chain store tax. Would not apply to gasoline filling stations where average daily stock of gasoline, motor oils or automobile accessories carried does not exceed $1,500. Rates graduated from $10 to $550

HB-99. To declare buying and selling motor fuels affected with public interest and a public utility subject to regulation of department of public works. Provides license and fees.

HB-349. To make it unlawful to operate any truck over highways Saturday and Sunday.

HB-397. To charge $5 fee in addition to regular registration for diesels, instead of 50 per cent more as now provided.

SB-128. Increase fuel oil tax rate from 0.25 cent to 1.5 cents per gallon.

SB-370. Regulating highway advertising.

SB-19. Relating to leasing of state lands for exploration and development of gas and oil.

North Dakota

(Convened Jan. 3.—Adjourned March 3.)

Bills Enacted

HB-70. Permits purchase of gasoline used solely for agricultural purposes without payment of gasoline tax; permit system.

HB-341. Imposes an additional 1 cent gasoline tax until July 1, 1941.

HB-171. Requires samples of all motor fuel to be sent to state food commissioner and chemist from point of destination in state before resale.

HB-285. Reduces state highway system by 2000 miles.

SB-61. Provides for regulation, inspection, collection of fees, and duties of state chemist and sale of heating oil and diesel fuel. Amended so that the definition of heating fuel is not mandatory and only to be used in case of dispute at time of sale.

SB-76. Re-enacts present 2 per cent sales tax. Exempts gasoline upon which special tax is paid.

Bills Which Did Not Pass

HB-345. To impose an additional tax of 1 cent per gallon on motor vehicle fuel to be known as motor fuel debenture tax.

HB-72. To repeal requirement of bonds for gasoline and oil dealers.

HB-196. To provide for diversion of highway funds to relief purposes for a period of two years. Would permit use of only a small portion of such funds for maintenance of highways.

HB-393. To lower specifications as to sulphur content of gasoline.

HB-116. To prohibit transportation by truck of gasoline, naphtha, benzine, fuel oil, crude oil, kerosine in any load of more than 1500 gallons.

HB-271. To prohibit operation of any commercial motor vehicle, with minor exceptions as to farm vehicles, etc. on Sundays and holidays.

HB-296. To provide that diesel truck fees shall be 75 per cent more than fees for trucks not propelled by diesel engines.

HB-354. To increase truck fees sharply in upper brackets, placing them on a gross weight instead of a net weight basis. Bill also provides for uniform dimension for trucks.

HB-232. Boiler inspection bill

HB-318. Peddlers license bill.

SB-62. To provide for coloring of gasoline; red for octane 78 or higher, any color except red or green for octane 70-78, green for octane 63-70, white for less than 63.

SB-71. To impose sales tax upon refunds of motor fuels.

Oil's WASHINGTON CALENDAR

Below are given the dates and notices of hearings, proceedings, new legislation, etc., which are of importance to oil companies. Notice is also given of regulations issued, interpretations of laws, new publications, etc., with information as to how readers may secure official copies of these.

HEARINGS:

Interstate Commerce Commission:

April 6—Railroad proposal to cut less-than-carload freight rates on petroleum products in southern states. (Atlanta, Ga.).

April 10—Railroad proposal to cut less-than-carload freight rates on petroleum products in southern states. (Memphis, Tenn.).

April 11—Further hearing on question of need for safety regulation for privately-operated trucks, ICC Bldg., Washington, D. C.

Federal Power Commission:

April 17—Hearing on application of General Gas Pipe Line Co. of Indiana for certificate of public convenience and necessity to build natural gas pipeline from Ky. to Ind.

May 15—Hearing at Helena, Mont., on application of Montana-Dakota Utilities Co., Minneapolis, to import natural gas from Canada into Montana.

ARGUMENTS:

Interstate Commerce Commission:

April 28—On application of Southeastern railways to publish reduced rates on petroleum products from marine terminals to inland points. (ICC Bldg., Washington, D. C.).

May 15—On application of Standard Oil Co. of Louisiana for reduced rates from Baton Rouge refinery to points in Midwest and Southwest. (ICC Bldg., Washington, D. C.).

EFFECTIVE DATES:

Federal Power Commission:

July 11—Order 59, amending rules of practice under Natural Gas Act.

MEETINGS:

May 1 and 2—American Trade Assn. Executive spring meeting.

REPORTS AVAILABLE:

"Limits of Inflammability of Gases and Vapors", Bureau of Mines Bulletin 279. Available at 20c a copy from Superintendent of Documents, Government Printing Office, Washington, D. C.

1938 Oil Sales At '37 Level

NEW YORK, April 3. — Among the 12 wholesale trades analyzed for sales volume in 1938 as compared with 1937 by Dun & Bradstreet, Inc., petroleum products and tobacco products were the only two which maintained sales last year at about the previous year's level, preliminary figures show. Total sales volume for 1938 for all industry declined 23 per cent under 1937.

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Spring is Here Again, Gasoline Prices Rise

By WARREN C. PLATT, Editor

Spring is here. Grass and buds are coming up. In the South, birds have hatched and flowers started to bloom. And, as generally happens in the spring, the price of gasoline in tank cars has started to advance.

All of which is but natural—nature's effect on earth and mind.

Gasoline gallonage follows the seasons and so does its price. Maybe some day our roads will be iceless and all cars will be run the same in winter as in summer. Or maybe the gallonage in the South will increase enough in the winter to offset any decline in consumption in the North, and thus keep a balanced demand on refineries.

But in the meantime the oil industry's price thinking is decidedly seasonal—so much so that one cannot help but wonder how much of our gasoline price declines and rises at refineries is not oftentimes due more to psychology than to the actual mechanics of stocks and runs.

Fall comes, nature shrinks its beauties of the summer back to earth, and the oil industry mentally and physically relaxes from its orgy of selling another "biggest season in its history." So, the common thought and common expression from one salesman to another, from one sales manager to another and from one president to another is almost in these very words: "Well, that is over, now the price will decline and we can't do much about it until Spring."

Whereupon the price faithfully declines, as, I believe, any psychologist will tell you, it must, when a whole industry holds that thought.

However, to make sure that the price drops, every one begins to shout at every one else about "holding back runs," not having "excessive stocks" and not going "crazy" for gallonage "this winter."

Every one having convinced every one else that the price should and will go down, it goes down, thereby providing proof to the industry's advisors who shout the rest of the winter against "excessive stocks."

So, through the winter the industry regales itself with speeches and statements against "excessive stocks." Hearings are held before public bodies and the economic crimes of the industry are threshed over. Just as in the past this winter we had many hearings in the oil fields on "proration," "allowables" and "excess stocks." Sales departments and buyers were furnished with plenty of evidence (?)—at least plenty of opinion from the higher ups, as to why gasoline prices were down and why they should stay down until "something was done."

The same psychology of course ran through the whole industry and out to every one of the 400,000 retail outlets. Every one of these human beings responded to it in a perfectly normal way and either let his prices sag or made them sag.

Well, at last comes Spring and here it is this year. The same kind of a Spring we have always had. Grass gets green, lilac buds are breaking, birds fly North and the price of gasoline goes up.

After the winter orgy of adverse psychology, we have the Texas Railroad Commission just in the nick of time—another day and Spring would have beaten it out—again deciding to keep the lid on wasteful production. Then we have the auto industry again moving a lot of cars and, on top of all but as usual, we have the Great American Public doing a few more miles a day with its cars, probably driving out to see if Spring is really here.

Probably we have heard the last of the argument over "excess gasoline" for a while. We'll bet all of two-bits that from now until Fall not another oil executive will be heard enjoining the industry that there is "too much gasoline" and that "runs must be reduced."

We have always wondered who that oil executive, and his advisors, thought they were talking to?

Just who is running too much gasoline?

Who has "too much" on hand?

Certainly the small Mid-Continent refiner whose occasional sales of a tank car or two are supposed to "make the market," has not had any excess of stocks that could be discovered with a magnifying glass in all of the vast stocks the country over which are necessary to run the oil industry. The small refiner does the best job of any of making his wants from day to day or shutting down.

Then one wonders who is running "too much oil"? If so why?

Two weeks ago the Texas Railroad Commission received from the majors operating under its jurisdiction, and who constitute the large gallonage east of the Rocky Mountains, a statement of their expected crude and gasoline stocks of March 31st this year as against the same time last year. The reports failed to show any of these "enormous increases" that were so much talked about during the year.

Five companies showed increases, relatively slight one would say compared to their requirements. They were, Skelly Oil Co., Continental Oil, Pan-American Pet. and Transport (Indiana Standard subsidiary), Republic Oil and Mid-Continent Petroleum.

One would hardly accuse any of those companies of not knowing what they were doing, of blindly plunging into personal disaster? Their records show they are among the best run oil companies in the country. Furthermore, two of them do not touch the Mid-Continent "market" whose prices control in the contracts covering the middle west.

The other three, I believe, are generally good buyers in that very "market" because they have pursued the policy of not maintaining the heavy investments necessary to take care of the consuming season's peak loads.

It is rather hard to believe that the big companies do not know what they are doing. They are well staffed with statisticians and economists who compile a couple of truck loads of figures every month on the affairs of their respective companies and of their markets.

An industry must have all the facts regarding itself BUT one cannot help but wonder if the oil industry does not go into a needless dither every winter by the manner of its approach to stocks and runs?

Just what is the standard by which the entire oil industry is judged as having so-many barrels too much of this and that?

The standard, it might seem, should be that of the management of each individual company. If each individual company, in the Fall and at intervals during the winter and at Spring, stated its individual stock position and whether the management was happy over it, that might seem to have more actual bearing on the situation than an attempted wholesale size-up of the industry?

Presumably if companies followed the practice of publicizing their stock positions at regular intervals they would see to it that they were above criticism? Then if every company said it was happy over its stocks, their sales departments would know there was no reason for pushing gasoline to the extent of breaking prices to unprofitable levels and the buyers would be disarmed of bearish propaganda.

There are so many other factors at work on price, natural changes that are taking place in the industry, that the desirability of spending so much time talking about "excess stocks" when no one admits to having any, might be questioned.

But above all the actual price on which the sales structure of the whole midwestern area rests, is what a half dozen refiners in Oklahoma think they can sell a few stray cars of their gasoline for. They believe quite firmly that they can only sell "at the market" and they refuse to see that they—this half dozen or less—are "the market." These refiners do not and will not advance their quotations until their state of mind is changed and that changes largely with the seasons and also is materially influenced by all the talk about "excess stocks" of gasoline.

Spring is here and these half dozen refiners know it. They know demand will increase. For years they have had the habit of seeing gasoline prices rise a bit in the Spring. That is a definite state of mind which obtains right this minute. These refiners have seen the grass get green, heard the birdies in the trees, so they take courage and each stiffens his own asking price and the price of regular gasoline is up some 0.5-cent in Oklahoma.

This is not whimsy. There is much more to this state-of-mind business than the industry recognizes, just as there is much more to the fact that the industry wants the tail to wag the dog, the tail being the few small Independent refiners in Oklahoma who are all that are left operating in the so-called "open spot market" there.

The facts in the famous Madison case showed most clearly—despite government counsel's effort to hide them—that the price went up in the spring of 1935 because all of the economic influences concerning the tank car market meant a bull market, and enough men in the industry realized that, including particularly the brokers, to jump in and play the market for an advance the majors' buying was mostly below the market and actually furnished a "bearish" influence.

What might do this industry a lot of good would be to have it psycho-analyzed.

Any way Spring is here.

NPA to Hear Richberg Talk On Mexican Expropriations

N. P. N. News Bureau

CLEVELAND, April 4. — Those attending the April 14 sessions of the National Petroleum Association's semi-annual meeting at the Cleveland Hotel here will hear the first public discussion of the current negotiations for return of oil properties expropriated in Mexico.

Donald R. Richberg, former NRA administrator and attorney for certain American and British oil companies whose properties were expropriated more than a year ago by the Mexican government, will discuss the expropriation and his recent conferences at Mexico City.

Another highlight of the NPA meeting will be a discussion of federal and state viewpoints on the report and recommendations of the National Resources Committee on oil, gas and other natural resources.

This discussion will take place during the afternoon session, April 13. John W. Frey, associate director, Petroleum Conservation Division, Department of the Interior, will present the federal viewpoint. Col. Ernest O. Thompson, chairman, Interstate Oil Compact Commission, and member of the Railroad Commission of Texas, will present the state's viewpoint.

Oil Men Also To Talk

These two viewpoints will be discussed further by H. T. Ashton, president, Socony-Vacuum Oil Co., Inc. (Lubrite Division), St. Louis; E. C. Breene, prominent attorney of Oil City, Pa.; W. T. Holliday, president, Standard Oil Co. of Ohio, Cleveland; and B. L. Majewski, Deep Rock Oil Corp., Chicago.

Also on the program for Thursday afternoon, is a talk on "The Province of the Federal Trade Commission in the Field of Business Practices", by Robert E. Freer, chairman, Federal Trade Commission.

The morning of April 13 will be devoted to group meetings. The Department of Manufacture will hear a talk on the "New Catalytic Process", by W. W. Gray, M. W. Kellogg Co., New York; The Department of Taxation will hear about "Administrative Provisions, State Social Security Act", by John F. McFarland, Sun Oil Co., Philadelphia; and the Department of Traffic and Transportation, "Proposed Transportation Legislation Now Before Congress", by John B. Keeler, chairman, legislative committee, National Industrial Traffic League.

Other Topics Listed

Speakers and their subjects for the general session the morning of April 14 will be:

"American Aviation—Present and Future", by Col. Edgar S. Gorrell, president, Air Transport Assn. of America.

"The Problems of Small Enterprises in the Oil Industry", by Paul G. Blazer, president, Ashland Refining Co., Ashland, Ky.

The April 14 breakfast session will be presided over by Harry A. Logan, a vice-president of the association.

The annual fellowship supper will be held in the Cleveland Hotel ballroom, the evening of April 13.

Group meetings will begin the afternoon of April 12, with the Western Pennsylvania Refiners Traffic Assn. meeting then, and the executive committee of the Department of Fire & Accident Prevention meeting that evening.

Michigan Program Has 'Divorce' Talk

PORT HURON, Mich., April 4. — Oil marketing divorcement will be a principal subject on the annual convention program of the Michigan Petroleum Assn., meeting at the Detroit-Leland Hotel, Detroit, April 11 and 12, according to J. F. Wilson, Star Oil Co., Inc., president. The subject will be discussed under the title of "Marketing Divorcement Bills", by Neil Staebler, Staebler Oil Co., Ann Arbor, April 11.

Other subjects and speakers the first day will be:

"A Tenderfoot's Ideas," by Elmer Ledbetter, Wayne Oil Co.

"Fuel Oil Tax", by William L. Davis, vice-president, Roosevelt Oil Co., Mt. Pleasant.

On April 12, these subjects will be discussed:

"Road Tax Collection," by Harry F. Kelly, secretary of state.

"Legislative Matters", by William Palmer, Michigan Petroleum Industries Committee.

"Proposed Regulations of Bulk Plants, Trucks and Service Stations", by Galen Wilson, Franklin Oil Co.

The speaking program both days will be during the afternoon.

California Rails Seek Differential under Trucks

Trucker's Service Better than Rail; Rail Rate should be Lower, is Claim

By J. N. WESTSMITH
N. P. N. News Bureau

LOS ANGELES, April 1.—California oil companies are watching with much interest and considerable speculation the progress of two related anti-truck legislative proposals now pending before state lawmakers in session at Sacramento.

Crux of this new drive on trucks — recognized as railroad-inspired—is found in California Senate Bill 1115, which would repeal Sections 13½ and 32½, and amend Sections 32 and 34a of the state Public Utilities Act along lines designed to make the intrastate shipper of commodities pay a premium for the faster and more flexible service offered by highway carriers.

In other words, the rails—balked in previous efforts to put the trucks out of business—are making a strong bid in California for legislation which will permit them to establish a differential under truck rates on the ground that they cannot—or will not— speed up their operations to compete with the trucks, according to the trucker's view. The rails demand a sop for their inefficiency, truckers point out.

The proposed revisions, as outlined in the senate bill, seek to establish the premise that transportation by rail and by highway are not "substantially the same services"—the inference being that extra charges should be added to truck tariffs because these carriers give a faster service and make more prompt deliveries. This stand has been taken by representatives of the railroads in nearly every rate hearing before the California Railroad Commission since trucks became serious competitors for the short haul business.

Law Amendments Proposed

One of the amending paragraphs, which it is proposed to add to Section 32 (e), reads:

"When added or accessorial service in the transportation of property is rendered by one type of common carrier subject to provisions of this act, but not to another type of common carrier subject to provisions of this act, the commission shall, in recognition of such added or accessorial service, make due and reasonable differences in the rates, tolls, rentals, charges, classifications, rules, regulations and practices to be observed by common carriers of each type."

It is of interest in analyzing the intent of this revision, to compare it with a somewhat similar provision—but not nearly as restrictive—to be found in the last sentence of Section 13½, which it is proposed to repeal. This reads: "But in determining the extent of said competition the commission shall make due and reasonable allowance for added or accessorial service performed by one carrier or agency of transportation which is not contemporaneously performed by the competing agency of transportation".

To further pave the way for designation of rail and truck transportation as different types of services and therefore open to the ruling that different rate structures should apply, SB 1115 proposes to strike the first sentence of Section 32(d), which reads:

"In any rate proceeding where more than one type or class of carrier, as defined in this act or in the Highway Carriers' Act, is involved, the commission shall consider all such types or class of carriers, and, pursuant to the provisions of this act or the Highway Carriers' Act, fix as minimum rates applicable to all such types or classes of carriers the lowest lawful rates so determined for any such type or class of carriers".

Practically the same wording is contained in the proposed amendment, except that the following phrase is added: "for substantially the same transportation service."

And then, in lieu of the present language treating with differentials to water lines, the following is added:

"When added or accessorial service is rendered by one type or class of carrier but not by another type or class of carrier, the commission shall, in recognition of such added or accessorial service, make due and reasonable difference in the rates to be observed by each type or class of carrier".

In asking themselves what the suggested amendments mean, opponents point out that the present law enables the commission to prescribe for difference in rates between rails and trucks where added services are rendered.

For example: If a truck advertises the shipper's products, there is an extra charge (CRC Decision 30409). If a truck does any loading or unloading beyond the tail gate there is an extra charge (CRC Decision 31606). If a truck carrier helps a shipper stack or sort, or if he provides helpers for loading or unloading or any other accessorial or incidental service he must make an extra charge of $1.00 per man hour (CRC Decision 31606).

Extra charges are also prescribed if the truck carrier delivers part shipments en route; in meeting railroad rates this also holds true if the trucker picks up or delivers to any point not served by a railroad spur track.

The only point at which truck and rail service differs widely and for which there is no difference in rates, is in the ability of the trucks to make faster and more prompt deliveries. To overcome this greater efficiency on the part of the trucks, is the declared intent of S. B. 1115 and its companion bill in the lower house—A. B. 1672.

'Rails Seek Monopoly'

One California truck association, fighting the bill, comments on this point as follows:

"Fifteen years ago service between San Joaquin Valley points and San Francisco and Los Angeles required anywhere from three to seven days. Trucks began to give service overnight. Railroads gradually, reluctantly, grudgingly followed suit. But there are still many places where trucks give overnight service and rails will not. They could, but they wont.

"Consequently, the groundwork is being laid for urging that it is not 'substantially the same transportation service.'

"Under existing law, the rail lines have urged at practically every rate hearing before the Commission involving trucks, that extra charges be added because trucks give a faster service, make more prompt deliveries. The Commission, under existing law has not penalized the shipper, because he is able to obtain a faster service.

"These are the reasons for the proposed changes in Section 32 (d). Where it is more advantageous to the shipper to ship by truck, let the shipper be penalized by extra charges. That is what this measure is designed for. The big shipper will sidestep this kind of a law by buying his own trucks. But what will the little shipper do?"

Trucks Lowered Rail Rates

Opponents also point out that arguments by the railroads in support of SB 1115 would leave the impression that their only desire is to reduce rates for California shippers and give them the benefit of lower rates. But that prior to the time when these same railroads were faced with land competition, it was always their policy never to reduce a rate, except when it was necessary by reason of water competition.

A comparison of rates on important commodities from points in California to eastern destination ten years ago and today, show, the opponents declare, that where there is no truck competition—rates have remained the same or have even been increased. However, between points in California where truck competition is a definite factor, rates on many products are only half what they were in 1924.

"By the same token," those opposing the measure ask, "if the railroads are losing money, as they claim, how can they continue to make reductions on the rates of local traffic indefinitely and ever hope to reduce rates on transcontinental traffic?"

Considerable farmer support for the proposed measures is developing on the claim that lower farm-to-market transportation rates would be the result of this legislation.

Strenuous efforts are underway by those interested in promoting highway traffic, including many of the oil marketing companies, to counteract this propaganda.

It is declared that these measures would permit rails to temporarily reduce rates far enough below cost to drive trucks off the highway — and then allow rails to raise rates to new high levels after truck line competition was "killed off." Trucks would be prevented from giving flexible, convenient service except at high rates, it is said.

OIL TRANSPORTATION NEWS

Latest developments in freight rates, legislation, taxes, regulations, and new construction affecting the transporting of petroleum products by truck, barge, tanker, pipeline, and railroad.

Divorcement of Pipelines Included in New Rail Bill

N. P. N. News Bureau

WASHINGTON, April 3. — A broadening of the "commodity clause" in the Interstate Commerce Act, proposed in the new Wheeler-Truman omnibus transportation bill, would result in divorcement of pipelines from oil company ownership and control.

The bill (S.2009) provides that "it shall be unlawful . . . for any carrier . . . to transport in commerce, subject to this act, any article or commodity, other than timber and the manufactured products thereof, manufactured, mined or produced by or under authority of such carrier or any subsidiary, affiliate, or controlling person of such carrier, or any such article or commodity in which such carrier, subsidiary, affiliate, or controlling person has any interest, direct or indirect, legal or equitable, except such articles or commodities as may be necessary or intended for use in the conduct of the carrier business of such carrier."

The Wheeler-Truman proposal seeks, according to its sponsors, to "place the regulation of other forms of transportation on the same basis as the regulation extended to railroads. If regulating the railroads is proper, then other forms of transportation which compete with them should likewise be regulated in identical ways and terms. . . ."

Regulate All Carriers

The bill would unify all types of carrier regulation under the Interstate Commerce Commission, and embodies many points recommended by the President's committee of six (all rail representatives), and provides for a study of the relationship among the different forms of transportation.

Observers here, however, gave the bill small chance of passage.

It is the first proposal of the current session which would effect pipeline divorcement. In previous years, Sen. Borah, Idaho, has had his pipeline divorcement bill in before the session was a few weeks old, but he has not yet dropped it this year.

Last year, Borah's pipeline divorcement bill was written into the Biermann-Gillette proposal to divorce the marketing of petroleum products from other branches of the industry. Although this bill has been introduced again at the current session, no action looking toward the holding of hearings has been taken.

* * *

Pipeline Divorce Urged by Hadlick

N. P. N. News Bureau

WASHINGTON, April 3. — Paul E. Hadlick, secretary of National Oil Marketers Assn., told the House Interstate and Foreign Commerce Committee that "only one thing" is necessary to protect the transportation systems of the country, "and that is to adopt the new commodities clause . . . and make our carriers by water or by truck, by pipe line or by railroad, carriers only, divorcing them from their various businesses, so that in their category they are dealing only in and with the transportation problem and not as processors or manufacturers or as merchants; and so that those selling merchandise will not in part be selling transportation services."

Hadlick's appearance at the committee's hearing on the transportation bills was as general counsel for the Federal Transportation Association, a group of government transportation officials, and was largely devoted to argument against any repeal or alteration in the present land-grant rail rates. (See N.P.N., Feb. 1, p. 14).

Contract Carriers Asked for Data

By Teletype

WASHINGTON, April 4.—Interstate Commerce Commission has ordered all contract carriers subject to the Motor Carrier Act to appear before the Commission here May 3 and show cause why contracts filed with the Commission should not be open to public inspection, and why contract carriers should not be required to furnish information as to number and types of vehicles operated, commodities transported, tonnage carried, miles operated and other data.

Rail 'Domination' of Trucks is Danger From Some Bills in Congress—Eastman

N. P. N. News Bureau

WASHINGTON, April 3.—It would be "unfortunate" if the railroads were allowed to dominate the trucking industry, as proposed in some of the rail-rehabilitation bills before Congress, Interstate Commerce Commissioner Eastman has told the House Interstate Commerce Committee.

The most important point in all the legislation proposed thus far, he said, and the proposal which would go farthest toward settling the many controversies which now exist between different types of carriers, was the proposal to establish an agency to study possibilities of integration, elimination of waste and the subsidy question.

"It would be eventually desirable," he said, "to use interchangeable freight containers, so that they might be shifted from railroad flat cars to truck chassis or water carriers."

It is generally recognized, he said, that trucks have a great advantage over railroads in speed of service and economy on short hauls, and added that there are many instances when trucks offer more convenient and faster service even on the long hauls, especially when it is necessary for a rail carrier to make frequent stops to break up and remake its train before continuing.

Use of terminals en route, as well as at the origin and destination points, he asserted, had been found to be "a great item of expense—possibly as much as 50 per cent of the total cost of the service," when a railroad must make frequent stops. A straight movement, such as that offered by trucks, he added, "of course, is the most economical service."

Eastman agreed with a statement by Rep. Hinshaw, Calif., that the trucks might be in a position to charge a higher rate than the railroads in cases where they offered a faster service, but added:

"On the whole, trucks are content to adopt railroad rates. An occasional higher rate is established, but the truck rates are held down by the threat of shippers using their own trucks."

Oil Trucker's 'Too Low' Rate Is Suspended

N. P. N. News Bureau

WASHINGTON, April 3. — Interstate Commerce Commission has suspended, pending an investigation, a proposal by W. B. Girvin, Leola, Pa., tank trucker, to reduce his rates on petroleum products from Wilmington, Del., to Pennsylvania and Maryland Eastern Shore points, upon petition of National Petroleum Carriers, Inc., and a group of Pennsylvania tank truckers.

Hearing has been set for June 2 at Lancaster, Pa.

Petitioners, who include Petroleum Transport Co., York, Pa.; W. C. Marshall, Upper Darby, Pa.; and E. Brooke Matlack, Philadelphia, point out Girvin's proposal would cut his present rates from 0.008 cents per gallon-mile to 0.0066 cents per gallon-mile, which is "unduly low and non-compensatory, and will result in injurious and unwholesome competition and defeat the sincere efforts of your petitioners to stabilize the rate structure in the area considered," they said.

Petition points out that National Petroleum Carriers is a "voluntary non-profit corporation" whose purpose is the promotion of a stable and fair rate structure. Marshall and Matlack are contract carriers whose minimum rate on the same commodities is 0.009 cents per gallon-mile, and Petroleum Transport Co. is a common carrier whose specific rates are considerably above Girvin's present rates, and in some cases almost four times as great as his proposed rates, it was explained.

Bills to Limit Tank Trucks Are Making Little Headway

(Continued from page 5)

Two bills (HB-284 and HB-686) were withdrawn from Minnesota's lower house. The first would prohibit hauling gasoline and oil in same truck, the second would limit loads to 2000 gallons.

Four truck bills in the Kansas House and Senate were unfavorably reported by committees, and North Carolina House Judiciary committee gave an unfavorable report on HB-681 to limit truck shipments of petroleum to 3500 gallons.

Latest report on the status of these bills, and a brief description of their provisions follow:

CALIFORNIA

HB-2147. Regulates transportation of inflammables on highways. Provides that tank trucks conform to certain standards and be inspected every other year. Bill in House Motor Vehicles Committee. It is understood this bill contains both ICC and API specifications for tank trucks.

COLORADO

SB-89. Prohibits transportation of more than 500 gallons inflammable liquids from 6 a.m. to midnight Sundays and holidays. In Senate Motor Vehicles Committee.

SB-99. Regulates quantity inflammable petroleum on highways and types of vehicles to be used. In Senate Motor Vehicles Committee.

HB-597. Prohibits transportation of more than 2000 gallons of petroleum and specifies types of vehicles to be used. In House Roads and Bridges Committee.

CONNECTICUT

SB-259. Regulates storage, transportation of inflammable liquids and types of vehicles to be used. In Senate Judiciary Committee.

ILLINOIS

SB-255. Regulates transportation, storage and purchase of petroleum. In Senate Oil and Gas Committee.

IOWA

SB-184. Limits to 1200 gallons outside municipalities and 2000 within amount gasoline transported. Passed Senate. Favorably reported by House Roads Committee, now in sifting committee.

MAINE

HB-1434. Authorizes Insurance Commissioner to regulate storage and transportation of petroleum. Referred to Insurance Committee of House. Reported by substituting HB-1982.

MINNESOTA

HB-284. Prohibits transportation of gasoline and oil in same truck. Withdrawn.

SB-477. Limits amount of inflammable liquid to 2000 gallons. Senate Committee recommended amendment not to include fuel and crude oil and kerosine and that it pass as amended. Passed Senate as amended. To Committee on Public Highways in House.

MISSOURI

HB-12. Limits load of inflammables to 1200 gallons and requires trucks stop at railroad crossings. Amended and reported, killing limit on capacity and retaining grade-crossing stop provision.

NEBRASKA

No. 432. Department of Inspectors may authorize shipment of more than 900 gallons of motor fuel at night. Amended but still in committee.

* * *

Bills Limiting Tank Truck Capacities Sponsored by Rails, Oil Man Charges

N. P. N. News Bureau

CLEVELAND—The railroads are behind legislation proposed in a number of states to limit capacities of tank trucks, according to A. W. Reynolds, of Canton, S. Dak., former president of the South Dakota Independent Jobbers' Assn. and now salesman for Champlin Refining Co.

"Riled up" by the legislative war against trucks Reynolds "boiled over" when he read a recent magazine advertisement inserted by the American Assn. of Railroads which, while attacking truck and water transportation, pleads for "fair play" in transportation. He tore out the "ad" and sent it in to N.P.N. with the following letter addressed to Editor Platt:

"Your editorial in the March 15th issue of the NATIONAL PETROLEUM NEWS struck a responsive chord with me and I wish to compliment you on the stand you are taking on the transportation question.

"Now, comes the enclosed advertisement in the March 25th issue of Liberty. I wish, particularly, to call your attention to the little black box at the lower right hand corner, 'Fair Play, No Favor in Transportation.'

"I have just recently completed a 'stretch' of three weeks, spent in a continuous fight against a bill to limit gasoline transports to 1500 gallons (HB 56) in the South Dakota Legislature.

"The bill was introduced into the House by a railroad employe at about the same time that similar bills were introduced in the legislatures of North Dakota, Minnesota, Wisconsin, and Iowa—all of them I believe under the guise of 'safety measures'. It is interesting to note that 2000 gallons was considered 'safe' in Minnesota, 1500 gallons in South Dakota and 1200 gallons in Iowa.

"The fact that these bills were introduced in these five states and possibly in many more, at about the same time is not just a coincidence but the result of a well planned campaign to legislate gasoline transports off of the highways. Now, in face of these asinine attempts to use the legislatures to eliminate their competitors, they have the effrontery to publish this advertisement asking for fair play.

"House Bill 56 was finally passed in South Dakota, but with amendments which render it totally ineffective as far as gallonage limitation is concerned; but to give you an idea of the pressure behind this bill, one of our senators told me that at least fifteen railroad attorneys had approached him to vote in favor of this bill.

"When it is a known fact that trucks are actually employing more men than the rails and only haul 5 per cent of the nation's freight as against the 66 per cent hauled by the rails—a ratio of employment of about 11 to 1 (and all we need to restore prosperity is to put ten to 12 million men to work) should we allow ourselves to be run out of business?

"When trucking interests pay $1,000,000 more a week in direct taxes than the railroads are we to submit to this class legislation without a struggle?

"These are provable facts and so, I too, ask for 'Fair Play'. Let the rails tell all the story, let them tell how much watered stock they want to pay dividends on, let them tell of some of their stock manipulation deals, let them tell the story of the subsidies granted them in this midwestern area, alternate sections of land for ten miles back from the right of way on each side of the track.

"Let them tell what any one man can do to earn $100,000 per year and then let these $100,000 men tell how much income tax they pay Uncle Sam.

"The truth is that trucking represents progress, a step forward in eliminating needless costs in distribution but the rails are trying by legislation rather than fair and open competition to reclaim lost tonnage.

"When they had a clear field, they did not give adequate service. They abused their monopoly on transportation so now they want relief from their own shortcomings by legislation."

ICC Calendar On Oil Trucking

DECISIONS

Emile L. Dauphinais, Worcester, Mass. Permit granted for operation as contract carrier of petroleum and products between certain points in Mass. and R. I. over specified routes.

Hearings Scheduled

Elmer's Express Lines, Syracuse, N. Y. April 20, Syracuse, on application to extend operations as a common carrier of lubricating oil in N. Y. and Pa. over irregular routes.

Donner Brothers, St. Clair, Mo. May 1, St. Louis, on contract carrier application to transport gasoline, motor oils and petroleum by-products in Mo. and Kans.

Northland Petroleum Transport Co., Lancaster, Pa. May 1, New York City, N. Y., on application to extend operations as a contract carrier of petroleum products in Pa. and N. Y. over irregular routes.

Maco Trucking Co., Ridgefield, N. J. May 3, New York City, N. Y., on application to extend operations as a common carrier of petroleum products etc. in N. J., N. Y., Conn., R. I., and Mass.

Arrow Transportation Co., Richmond Highlands, Wash. May 4, Spokane, on application to extend operations as a common carrier of petroleum products in Wash., Idaho and Ore., over irregular routes.

W. B. Girvin, Leola, Pa. June 2, Lancaster, Pa., on suspension of proposed reduction in track rates on petroleum products from Wilmington, Del., to points in Pa. and Md. Petition for suspension filed by competing truckers.

Pick up Left Overs

May Postpone Oil Rate Cut In Northwest

N. P. N. News Bureau

LOS ANGELES, April 1.—Proposed modifications in the through truck and rail rates on bulk petroleum products from Pacific Coast points to Spokane, Wash., and to other consuming areas of the Inland Empire to meet competitive conditions introduced by the combination barge and truck haul up the Columbia River from Portland, Ore., are expected to be held in abeyance pending a joint session between representatives of the Interstate Commerce Commission and rate-regulating commissions of Oregon and Washington.

It was revealed last week that a rate of 32 cents per 100 pounds of refined oils—principally gasoline—proposed by the Washington department of public service to become effective April 13 on intrastate hauls between the Seattle area and Spokane, would likely be suspended for the present.

25-Cent Rate Now

This was in line with the belief that the ICC would suspend a rate of 25 cents per 100 pounds published by the railroads for the direct haul from Portland.

The current rate on gasoline in tank car and truck and trailer lots from both Seattle and Portland to Spokane is 40 cents per 100 pounds.

Publication of through rates, for shipment up the Columbia River to either Attalia, Wash., or Umatilla, Ore., by barge and then by truck to the Spokane area, was seen to lie somewhere in the future—after the entire matter of rates in this Northwest territory is ironed out.

BULLETIN

WASHINGTON — Interstate Commerce Commission late today denied trucker's request for suspension of authority granted railroads to cut rates on gasoline and kerosine moving inland from South Atlantic ports, which are due to become effective April 5. No decision was made on request for general investigation of southeastern oil rates.

Oral argument on these rate cuts has been set for April 28 at Washington.

Southwestern Rails Propose 35% Cut in Oklahoma Rates

TULSA, April 4.—Reductions of about 35 per cent in Oklahoma intrastate petroleum rail rates is proposed by southwestern railroads in Southwestern Freight Bureau Docket 16271, to be heard at St. Louis April 10.

This docket also proposes reductions in petroleum rail rates between the following points:

1. Oklahoma to Kansas and intermediate points in western Arkansas and Missouri.

2. Kansas to Oklahoma.

3. Kansas City to Oklahoma and other intermediate points in western Arkansas and Missouri.

4. Joplin, Mo. to Kansas and Oklahoma.

In proposing the reductions, rails cite results obtained by comparing 1930 and 1937 statistics that show:

1. A 38.2% loss by rails in petroleum tonnage terminated in Oklahoma.

2. A 45.2% loss by rails in petroleum tonnage originated in Oklahoma.

3. A 32.3% loss by rails in petroleum tonnage originated in Kansas.

4. A 52.8% loss by rails in petroleum tonnage terminated in Kansas.

It was also pointed out that of a total of 4755 cars of gasoline terminating in Oklahoma during June 1938, rails handled only 37%. Trucks got 63% of the business.

Rate reductions are necessary, it was said, in order to encourage movement of long-haul traffic, to prevent further diversion from rails and to induce shippers to return to rails a part of traffic now handled by rails' competitors.

* * *

Kansas-to-Nebraska Rate Cuts Proposed

WICHITA, Kans., April 4.—Proposal (W. T. L. C. D-37-327) to reduce petroleum rail freight rates from Kansas origin points to Nebraska will be considered by Executive Committee of Western Trunk Lines Committee April 7 at Chicago along with application for reduced Kansas intrastate and Kansas to Colorado rate reductions.

It is proposed that Kansas petroleum rates to most destinations in the eastern two thirds of Nebraska be reduced about 30%. Cuts to other destinations may figure slightly below this.

With western lines considering rate reductions into the southwest, southwestern trunk lines have proposed in S. W. F. B. Docket 16284 a reduction in petroleum rail freight rates from Oklahoma and Texas Panhandle origin points to Colorado. This docket also would reenstate the origin relationship with Wichita, Kans. existent before the 10 per cent hike provided for in Exparte 123 went into effect.

* * *

Twin Cities to Superior Rate Cut Proposed

CHICAGO, April 3.—Western Trunk Line railroads in Docket W. T. L. C. D-37-333 propose to reduce rail freight rates from Minneapolis, St. Paul and Minnesota Transfer, Minn., to Superior, Wis., to 9 cents a hundredweight on gasoline, petroleum refined oil, fuel oil and distillate.

On March 16 rate from Superior to Twin Cities area was revised to 9 cents, it was pointed out. Since there is considerable supply of gasoline, petroleum refined oil and distillate at Minneapolis, it is desired that the same rate affect shipments in the opposite direction, it was said.

* * *

ICC Returns to Kansas Jurisdiction Over Local Rates

WASHINGTON, April 3.—Interstate Commerce Commission has returned to the Kansas Corporation Commission jurisdiction over Kansas intrastate rates on petroleum and products which it assumed, under provisions of the Interstate Commerce Act, to investigate into the need for application of the 10 per cent increase ordered last year on interstate rates to the Kansas intrastate rates.

By its order of Feb. 20 this year, ICC determined that the 10 per cent should be added to Kansas intrastate rates, and on March 15 the Kansas Corporation Commission authorized the increases, which are reported to have been put into effect March 31.

Eagle Plans Cracker

CHICAGO—Eagle Oil & Refining Co. of Santa Fe Springs, Calif., has signed a license agreement with Universal Oil Products Co., to install Dubbs cracking capacity in its 3000-barrel per day refinery there. Universal engineers are surveying the plant, preparatory to making recommendations for changes and new equipment.

ICC Extends Filing Date on Illinois-Pennsylvania Rates

WASHINGTON, Apr. 4. — Interstate Commerce Commission has extended to April 17 the authority granted Central Freight Association railroads to publish new rates on crude petroleum from the Illinois field to points in nortwestern Pennsylvania and in New York (NPN, March 29, page 37). Tariffs covering this movement have not yet been filed.

Under special authority granted by the commission, allowing the rails to file tariffs on five days notice, the authority was to have expired April 1. Unless the tariffs are filed by April 17 —or extended further, the authority will lapse, and any new rates will have to be filed on the regular 30-days notice required by law.

Tidelands Plan Sent To Attorney General

N. P. N. News Bureau

WASHINGTON, April 3. — Senate Public Lands committee, before which hearings were held last week on the proposals that the federal government seize title to off-shore oil lands off the coast of California and other states, has referred the measures to Attorney General Frank Murphy for an opinion as to their legality.

Meanwhile, no report, either from the Senate Public Lands Committee or the House Judiciary Committee, which also held hearings on the proposals (NPN, March 29, page 29), is expected until the attorney general has been rendered.

Regional Groups to Improve Oil's Public Relations Work

WASHINGTON, April 3. — American Petroleum Institute's new "public relations" set-up was furthered here today by a meeting looking toward preliminary organization of a regional public relations committee.

W. A. O'Day, American Oil Co., Baltimore, was elected chairman of the committee — one of 13 being organized over the country for public relations purposes.

Northrop Clarey, Standard Oil Co. of New Jersey, who presided over today's meeting, said "our people are making a comprehensive study of the economic contributions of our industry, and of its social and economic benefits to the American public."

Victor H. Scales, American Petroleum Institute publicity director, told NPN that the meetings were being held with a dual purpose—first, to determine from talking with men in the field "what is wrong with our public relations," and second, "what do you suggest for improving them?"

In a press release prepared by the API, the purpose of the meeting was explained thus:

"We are interested especially in developing ways and means whereby the people of the industry may become aware of the great and continuing service being rendered by this gigantic industrial enterprise, and also in ascertaining what this industry means, in the way of economic contributions, to each section of the country.

"It is our intention to expand the membership of this regional committee until it is truly representative of every branch of the industry so that both the data we compile and that which we may disseminate may reach all of the industry's many branches and interests. Preliminary findings indicate we have reason to be proud of this essential industry, which means so much to so many sections of the United States."

Among those present at the initial meeting of the ninth regional committee (including the Carolinas, Virginia, West Virginia, Maryland and the District of Columbia) were independent jobbers, major company representatives, and others, were:

H. L. Allen, The Texas Co., Washington; Paul A. Bennett, Quality Oil Co., Winston-Salem, N. C.; C. E. Bishop, Atlantic Refining Co., Baltimore; F. S. Callahan, Socony-Vacuum Oil Co., Baltimore; Ralph Champlin, Ethyl Gasoline Corp., N. Y. City; F. S. Cronin, Ethyl Gasoline Corp., Baltimore; Geo. M. Heinle, Cities Service Oil Co., Rosslyn, Va.; O. Y. Kirkpatrick, Pure Oil Co. of the Carolinas, Charlotte, N. C.; E. A. Kyhn, Virginia Petroleum Industries Committee, Richmond; M. C. Mallon, National Petroleum Assn., Washington; J. C. Megraw, The Pure Oil Co., Cabin Creek, W. Va.; H. L. Mills, Hagerstown, Md.; S. J. Murphy, Standard Oil Co. of New Jersey, Columbia, S. C.; W. A. O'Day, American Oil Co., Baltimore; E. J. Schul, Virginia Home Oil Co., Norfolk; J. R. Sherwood, Sherwood Bros., Inc., Baltimore; George D. Thomas, Associated Stations, Richmond; Scales and J. S. McNally, of the American Petroleum Institute.

Background for Legislation Sought in Illinois Oil Probe

SPRINGFIELD, Ill., Apr. 3.—Investigation by a legislative committee composed of five senators and five representatives into the producing, processing, transporting and marketing of oil in southern Illinois will get under way at Salem, Ill. April 7, according to an announcement by Rep. Oral P. Tuttle, Harrisburg, chairman of the investigating committee. Senator John J. Parish, Centralia, is secretary of the committee. A report of the investigation is to be returned to the legislature by April 30 with recommendations for future oil legislation.

Due to the increasing number of oil regulatory bills recently introduced into the Illinois legislature, a comprehensive report on the activities of the industry within the state is essential to guide the legislature in voting on subsequent bills, it was said.

The investigating committee would have the power to subpoena witnesses, compel testimony under oath and compel the production of records.

Attacks Pipeline Companies

"The people in southern Illinois don't seem to want proration," said R. J. Branson, Centralia, House majority leader and a member of the committee, "but they've got proration now, enforced in an inequitable manner by the pipeline companies. Something must be done."

Charges that the pipeline operators sometimes pay $1.15 per barrel to a well owner on condition that he restrict his production to a fraction of its potential were made by Branson. "They then go to the adjoining well and contract to take the entire output there at 40 to 50 cents a barrel," he said.

A public meeting for the purpose of organizing a movement to fight proration legislation in the Illinois state assembly was called last December, by the Illinois Independent Oil Producers and Royalty Owners Assn. Previous to this meeting citizens were asked to write members of the Illinois legislature asking them to oppose proration and other "needless" oil legislation. The association charged that regulatory measures would force producers and land owners in Illinois to wait for years for return of the money invested in oil wells and hold back Illinois developments to the advantage of other oil-producing states.

The Summers bill prepared by Prof. W. L. Summers of the law school of the University of Illinois at the request of William Bell, then president of the Illinois-Indiana Petroleum Ass'n., which would limit and prorate the production of oil and gas, which was defeated in a special legislative session last year.

Sharp increase in crude production in Illinois, averaging around 163,000 bbls. daily now, was said to be a factor in the launching of the present investigation particularly in regards to the question of proration.

Jerry Sadler Girds himself for 'War' On 'Foreign' Oil Companies in Texas

By Teletype

TULSA, April 3.—The freshman member of the Texas Railroad Commission, Jerry Sadler, loosened a radio harangue March 31 to "Mr. and Mrs. Average Texans," attacking the major oil interests as "the enemy within our borders."

Declaring that he was "amazed and dumb-founded" at the amount of "pressure that can be and is always being used to force servants of the people to bow to the desires of the financial barons of Wall street," Commissioiner Sadler then warned "the average citizen of Texas" that "the princes of privilege and the minions of monopoly would deny you, the plain folks of Texas, the right to enjoy and use the "God-given resources".

"Insidious and greedy monopoly has thrust its ugly head into the bread basket and the milk bottles of Texas. Monopoly, owned and controlled by the Barons of Finance, is threatening to use the lash on your oppressed back because monopoly has stubbed its toe against a courageous few who would stop monopoly's pillagery and robbery.

"Every time the Railroad Commission holds a statewide hearing, hotels are filled with well-dressed and well-fed men who fly—in private airplanes, come in high-powered limousines or Pullman cars.

"You may depend on it that this crowd will always be there, but there are none to represent you, Mr. and Mrs. Average citizen unless Jerry Sadler and other members of the Commission take it upon themselves to represent the plain folks who are the victims of exploitation.

"The question simply resolves itself down to this 'who shall run the people's business? Shall it be the people's duly elected servants or shall it be the bloated, sleek, and privileged goblins of greed?' "

Sadler told his audience how "we shall gird our armour and defy this enemy within our borders", his recommendation being that each Texan demand that the gasoline he buys be made from Texas crude oil, produced in Texas refineries by Texas labor.

And now, Petroleum furnishes Material For Making Airplanes, as well as Fuel

TULSA, March 30.—Hundreds of new products developed from petroleum now reposing on oil company laboratory shelves, await the creation of new industries and new business frontiers, Frank Phillips, chairman of the board, Phillips Petroleum Co., told the Des Moines Chamber of Commerce, in an address March 24.

Pointing out that already airplane wings and fuselage can be made from new plastic materials which his company, among others, makes from resins, cutting manufacturing time to one-twentieth, and adding 35 miles per hour to speed, Phillips said, even airplanes themselves may be made of petroleum in the future.

The Phillips research laboratory, employing 150 people, can manufacture such products as acetylene for welding, rubber, perfume, dye, explosives, ammonia, ink, fertilizer, anti-freeze, insecticide, moth balls, chloroform and alcohol.

Phillips urged Iowans to go slowly with alcohol-gasoline, pointing out that corn at 50 cents a bushel places a cost of 26.8 cents per gallon on alcohol. This compares with the present cost of 5 cents per gallon for gasoline at the refinery.

He offered his company's services and information free to the state, saying that his laboratory has found that as much alcohol can be made from the gas in one medium sized gas well as can be made from 100,000 acres of corn producing 30 bushel per acre.

TPD Bid Dates Set

N. P. N. News Bureau

WASHINGTON, April 3.—Opening dates on bids to supply gasoline and fuel oil requirements of government agencies during the July-September quarter have been set by the Treasury Procurement Division as follows:

Gasoline	Region	Fuel Oil
Apr. 12	1 (East)	Apr. 27
Apr. 10	2 (Southeast)	Apr. 26
Apr. 14	3 (Midwest)	Apr. 24
Apr. 14	4 (Southwest)	Apr. 21
Apr. 10	5 (Rocky Mts.)	Apr. 21
Apr. 12	6 (West Coast)	Apr. 20

CHICAGO, April 3. — Worth Refg. Co. recently announced plans for the installation of a water terminal on the Sag canal, site of its Blue Island, Ill. refinery.

Upon completion of the terminal, refined products would be shipped up the Sag canal on 10,000-gallon barges to one of the nearby East Chicago water terminals and there transferred to lake vessels to be shipped to various destinations on the Great Lakes.

Building of the water terminal is expected to get under way within the next 60 days.

Oklahoma Sets Same Quota

N. P. N. News Bureau

TULSA, April 3.—Oklahoma's allowable production for April has been set by the Oklahoma Corporation Commission at 428,000 barrels daily. This is the same figure that has been in force since last August.

Only unusual occurrence at the proration hearing March 29 at Oklahoma City was the request of the operators in the Oklahoma City field for a reduction in percentages on which production is figured. The operators wanted the percentage cut from 16 to 14.

The Kansas Corporation Commission has delayed issuance of an April order, presumably in the hope the new conservation statute would become effective within the next few days. It has been pointed out, however, that before an order is issued a public hearing must be held and it is believed in some quarters that the commission will go ahead and issue an order for April which will include some special allowables. The new law all but closes the door on special allowables in that state.

New Mexico's April production will remain unchanged at 109,700 barrels daily, although the state oil and gas commission has issued permit for production of about 5000 barrels daily for export demand.

Texas Quota Cut, Smith & Sadler do 'About Face'

New Order Lifts Saturday Shutdowns But Pares Some Fields down to Bone

By ALLEN S. JAMES
N. P. N. News Bureau

TULSA, April 3.—The new coalition among the Texas Railroad Commission's members sizzled in the frying pan for several days after drafting its initial crude production allowable order for April and then flopped right into the fire late last week when it took a second try at order writing.

How hot the fire is remains to be seen. It may die right out, but the belief persists in many quarters that there is going to be some flame fanning with injunctive proceedings in federal and state courts.

One such fanning was reported forestalled April 1 when the two commissioners issued an order modifying the drastic reductions in production in Yates and Old Ocean fields. Yates Field, in West Texas, cut from 26,683 barrels to 6127 barrels daily, was raised back to 20,000 barrels. Old Ocean field was given 2000 barrels additional for new daily of 4000 barrels. It had previously been allowed 6006 barrels.

Attorneys for certain operators in the two fields were reported on the way to the courthouse when the commissioners announced the modification. Production in these fields is from the deepest horizons and the highest gas pressures of any in the state. Operators had contended the wells could not be produced at the low rates which the commissioners had established. The new order permits top allowable of 250 barrels per well.

The second order for April, issued March 30 by Chairman Lon A. Smith and Commissioner Jerry Sadner without Commissioner E. O. Thompson (by his own statement) having anything to do with it, cuts Texas production for April almost as much under the March allowable figure as the first April order increased output above the March daily average.

Daily average production in April, under the newest order, would be approximately 1,253,000 barrels as compared with estimated net daily average in March of 1,315,000 barrels. The initial order had called for an estimated daily average production of 1,513,000 barrels in April. Thus the new order cuts April production approximately 65,000 barrels daily under the March figure and approximately 260,000 barrels daily under the allowable set for April in the first order.

The Bureau of Mines' estimate of market demand for Texas crude in April had been placed at 1,412,700 barrels daily. The newest allowable, therefore, is approximately 160,000 barrels a day under the Bureau's figure.

It remains to be seen how the commissioners will handle the 16,000 barrels daily increase granted Yates and Old Ocean fields. If they do not take that amount off somewhere else the figures above based on the order as issued March 30 will have to be revised by that amount. Commissioner Sadler has intimated there might be other "adjustments" later this week.

Lift Saturday Shutdowns

Since the newest order retains provision of the first order for the lifting of the Saturday shutdowns during April, the coalition has made deep slashes in Gulf Coast, West Texas and Southwest Texas districts in order to bring the allowable down to the 1,253,000 barrels daily.

Approximately 100,000 barrels daily were carved from both the Gulf Coast and the West Texas districts while little change was made in the inland Texas districts.

The East Texas district, the home of both Smith and Sadler, was retained on a basic allowable approximating 522,000 barrels daily. With the Sunday shutdown, however, actual production for the month figured on a 30-day basis will approximate 448,000 barrels daily, as compared with a daily production in March of around 380,000 barrels.

New basic allowable for Southwest Texas is estimated at 229,000 barrels daily, as compared with former basic allowable of 333,800 barrels; Gulf coast district 188,500 barrels as compared with 283,000 barrels; and West Texas 168,000 barrels as compared with 262,500 barrels. Little change was made in the East Central Texas district, basic allowable being 121,400 barrels as compared with previous one of 121,000 barrels, while the West Central Texas district was dropped to 67,300 barrels from the former 84,800 barrels. Panhandle district was raised from 86,000 barrels to 88,900 barrels, while North Texas was boosted from 98,700 barrels to 117,600 barrels.

Oppose 'Special Allowables'

It has been known for some time that Smith and Sadler have been opposed to the "special allowables" in certain of the Texas fields, notably the Gulf coast and West Texas. Their contention has been that without these special allowables some of that market would find its way to inland Texas fields, particularly East Texas, where pipeline capacity to the Gulf coast is estimated at about 800,000 barrels daily whereas the field has been producing less than half that amount of oil daily.

The commission in the past has granted numerous special allowables and has exempted some fields from observance of the Saturday-Sunday shutdown orders. Some of these special grants, according to Smith and Sadler, have been handed out without a public hearing.

The two commissioners in the April order cancelled all special allowables and ordered all fields in the state to observe the one-day shutdown. They announced when they issued the newest order that "no more back door handouts in the form of special excess allowables determined after private hearings" would be granted.

"In the future," the commissioners said, "all applications for exemptions or increases in allowables will be publicly heard."

Cuts Majors' Districts

It might be interesting to observe, meanwhile, that the major companies are, for the most part, the heaviest producers and purchasers of crude in the districts which received the most drastic allowable cuts under the newest order. Most of the major companies in those areas also are active in the East Texas and the North Central Texas producing districts.

It remains to be seen just how much of the crude these companies lose through the cuts they will attempt to replace by inland Texas oil. And here is another point. Will these companies be content to take from the inland Texas fields only their own increased production and try to get along without increasing their purchases from other producers?

The opinion was general late last week, meanwhile, that some of the affected producers will go into federal court in an effort to enjoin the commission from enforcing its order.

Many observers say that it can be proved by engineers that underground physical waste would occur if some of the wells in the Gulf coast, Southwest and West Texas districts were to be cut back to the daily allowable provided for in the new order. Some of the wells, some of the observers say, would stand a good chance of being killed. And it must be kept in mind that the Texas conservation law has as its very foundation the prevention of physical waste in any form.

There is some hint that the newest order may violate the marginal well law, but it is not believed generally any fuss will be made over that point because the shutdowns that have been in force for some time have been a generally accepted means of getting around that statute.

Thompson Favored Status Quo

Prior to the issuance of the second April order Commissioner Thompson had issued a

Kansas to Continue Same Oil Allowable

TULSA—Kansas Corporation Commission has announced the March allowable order permitting production of 156,850 barrels daily will be continued until further notice.

The commission's action was attributed to the fact that when the new conservation law becomes effective a hearing will have to be held before a new order can be written, and it was deemed advisable to continue the March order until that law does become effective and notice of hearing can be published.

The March order contains several special allowables which are expected to remain in force until the new order can be prepared. The new law, however, restricts the commission considerably in the granting of special allowables.

statement in which he said the first order stepping up production by lifting the Saturday shutdowns was a "mistake." He had drafted a proposed order calling for a continuation for another 60 days of the orders which had been in force for the first quarter of the year.

Shortly after he issued his statement Sadler and Smith wired the attorney general asking for an "investigation" of alleged price-fixing among crude oil purchasers which might be in violation of the state's anti-trust laws.

Many observers expressed the opinion that Thompson, with his statement, had dug a hole for his colleagues and that the plea for an investigation was a balloon sent up to hold the public's eye while they tried to find a way out of that predicament.

There is some speculation now in a few quarters, however, as to just who is currently occupying the hole. One crude oil purchaser said that if the commissioners can make this order stick there is the bare possibility that the demand for the crude available might become brisk enough to react favorably on the crude price structure, in which event Smith and Sadler could step to the front of the platform and take the plaudits.

On the other hand it must be kept in mind that the Texas legislature is still in session and there are rumors of a renewed agitation for the creation of an oil and gas commission which would take control of the industry out of the hands of the railroad commission and let that latter body continue down the lane for which it originally was created. The action of the Smith-Sadler coalition, some observers say, undoubtedly will fan this agitation and these observers, admittedly looking a far piece down the road, see the possibility of a new commission with Thompson as its chairman.

DEATHS

W. H. Landreth, chairman of the board of the Landreth Production Co., Fort Worth, Tex., died March 28 at his home in Joplin, Mo. He was a brother of Ed A. Landreth, president of the company.

* * *

R. L. Stratton, for the past 20 years production superintendent in the Nowata, Okla. shallow sand fields for the Prairie Oil & Gas Co. and the Sinclair Prairie Oil Co., died following a heart attack March 30 at Coffeyville, Kan. He was 66 years of age.

Around The Mid-Continent

By Allen S. James

A prize patronage plum tree of the Oklahoma Corporation Commission—the one which has been bearing regularly the 143 gasoline inspectors' jobs—has been given a thorough pruning by the Oklahoma legislature on orders from Gov. Leon C. Phillips. The Senate late last week gave the final touch-up to the job despite the fact its members have an interest in the fruit of that tree.

The Senate passed a bill providing for 28 inspectors, with seven more to be appointed by the governor if he thinks they are necessary. The inspectors would be paid $150 a month with a maximum of $75 a month for expenses. The fees of 4 cents a barrel which heretofore have been collected by the 143 inspectors in lieu of salary, would take the form of a tax of 0.08 cent a gallon on light oils which would be collected by the Oklahoma Tax Commission. The tax would go into the general revenue fund. There will be no savings to the petroleum industry since the tax figures out the same as the former fee, but the money would, the bill's proponents have said, finance completely the corporation commission and add an additional $100,000 a year to the state's revenue.

The House previously had passed a bill cutting the "tree" to the point where it would support only 15 inspectors. It is believed, however, that an amendment will now be put through making the House and Senate bills identical. The governor is expected to sign the bill when it reaches his desk.

* * *

● Another Oil Man Named For Texas Highway Post

The third attempt of Gov. Lee O'Daniel of Texas to name a chairman for the Texas Highway Commission apparently has met with success. The governor has named James M. West, Houston oil man and capitalist, and it is generally believed his appointment is acceptable to the legislature.

West is the second oil man the governor named. His other appointment was Judge J. C. Hunter of Abilene, Tex., president of the Mid-Continent Oil & Gas Assn. Opposition to his appointment was not based on dislike of Hunter but on the fact that the governor had not observed geographical lines and named an East Texan. Hunter clipped the row in the legislature by announcing he would not accept.

The third appointee, West, is reputedly one of the wealthiest men in the Gulf coast area, and possibly in Texas. He started as a waterboy for a lumber company at 50 cents a day. Eventually he obtained a small sawmill, then branched out into ranching and oil. His Cleark Lake estate, recently sold to the Humble Oil Refining Co. for a reported 40 million dollars, was bought before oil was discovered in that area. He also has a number of other oil properties.

* * *

● Tulsa City Hall In Clean-up

It may be interesting to oil men to know that the Tulsa city hall is going to be cleaned up. It is not a political clean-up, but some wags have said it is to be a clean-up due to politics. The city has been notified that a WPA project calling for expenditure of $2962 for "completely cleaning and renovating" Tulsa's city hall has been approved by the WPA heads in Washington. The city will spend $300 of its own funds on the work.

The present city administration is Democratic.

* * *

● 'Lake Elmer Thomas'

The name of Oklahoma's U. S. Senator Elmer Thomas will have to be associated with something other than a lake in Oklahoma if it is to be handed down to posterity. The Oklahoma legislature has seen to that by voting to change the name of a new lake in the state from "Lake Elmer Thomas" to "Lake Alice Murray."

* * *

● He'll Learn Soon

A wealthy East Texas oil man's son, now a business administration student at the University of Texas, recently was swindled out of $4800 when he tried to get in the oil business, according to reports current in Texas. The student met a man in Austin, Tex., who posed as representative of a reputable oil company. The man said he had been given a check for $7800 with which to buy a certain lease, but that if the oil man's son could get it for less, the difference would be his. The student contacted the alleged holder of the lease and finally made a deal to buy for $4800 cash. But the student could not find the man with the $7800, and then he found the lease was bogus. The securities division of the State Department has filed charges against one of the men after an investigation of the student's story.

* * *

● Texas Fair Trade Law

Texas, one of the few states not having a so-called fair trade act, appears on the way to joining the ranks of the majority. The House last week passed a bill which would authorize manufacturers of trade-marked products to stipulate in contracts that the products can not be sold below a certain price.

'Gas' Stocks In First Drop

N. P. N. News Bureau

NEW YORK, April 4.—The first decline in motor fuel stocks in four months was reported by the American Petroleum Institute today. Inventories of finished and unfinished gasoline dropped 284,000 barrels in the week ended April 1. There was another decline of more than a million barrels in gas and fuel oil inventories, the Institute's report also showed. Refinery crude runs were cut 55,000 barrels on daily average, and plants reporting gasoline production to the Institute increased their output only 12,000 barrels.

Estimated inventories of gasoline as of April 1 totaled 87,277,000 barrels, 4,968,000 barrels under inventories on the same date last year. Last week's decline of 284,000 barrels compared with a decline of only 67,000 barrels in the comparable seven-day period of 1938.

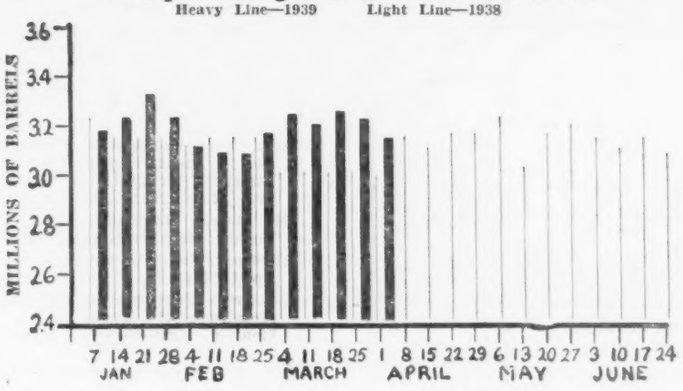
Probably more notable was the continued sharp decline in stocks of gas and fuel oils. Inventories of all fuels dropped to 127,893,000 barrels on April 1, with the gas oils and distillates down 685,000 barrels and the residual fuels down 460,000 barrels.

At the level reached on April 1, inventories of the light and heavy fuels combined were down 26,773,000 barrels from the all-time peak of 154,666,000 barrels reached on Nov. 12, 1938.

Latest Oil Industry Statistics

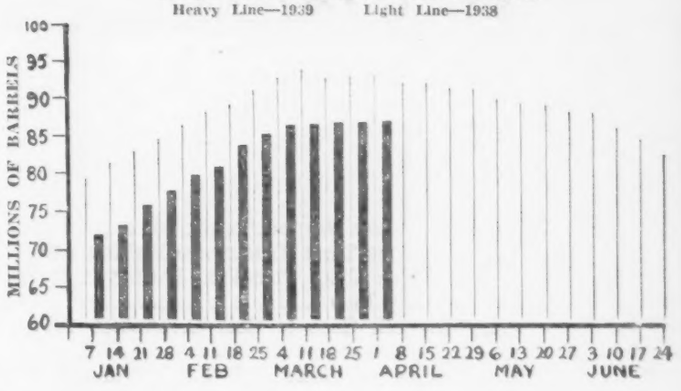
Daily Average Crude Runs to Stills

Heavy Line—1939 Light Line—1938



Total U. S. Motor Fuel Stocks

Heavy Line—1939 Light Line—1938



A. P. I. Weekly Refinery Report

(Figures in Thousands of Barrels of 42 Gallons Each)

Districts	Per Cent Capacity	Daily Average Crude to Stills (Barrels) Week Ended		Per Cent of Reporting Capacity Operated Week Ended		(a) Gasoline Production Week Ended		Stocks (Thousands of Barrels) Total Finished and Unfinished Motor Fuel(b) Week Ended		Stocks of Gas and Fuel Oil — Gas Oil and Distillates Week Ended		Residual Fuel Oil Week Ended		Total Week Ended	
		April 1	Mar. 25	Apr. 1	Mar. 25	Apr. 1	Mar. 25	Apr. 1	Mar. 25	Apr. 1	Mar. 25	Apr. 1	Mar. 25	Apr. 1	Mar. 25
East Coast	100.0	487	496	79.2	80.7	1,441	1,474	22,170	21,617	2,704	2,966	3,994	4,027	6,698	6,993
Appalachian	85.9	100	110	78.1	85.9	321	363	3,362	3,427	238	233	487	494	725	727
Ind., Ill., Ky.	89.5	431	458	83.9	89.1	1,768	1,774	15,416	15,700	2,120	2,168	2,787	2,949	4,907	5,117
Okla., Kans., Mo.	81.6	241	252	70.5	73.7	(c)856	(c)862	7,523	7,935	992	1,016	2,912	2,893	3,904	3,909
Inland Texas	50.3	82	96	51.6	60.4	395	420	1,770	1,838	267	276	1,508	1,541	1,775	1,817
Texas Gulf	89.5	804	767	89.8	85.7	2,600	2,443	10,259	10,863	2,444	2,678	4,643	4,475	7,087	7,153
La. Gulf	97.3	134	136	92.4	93.8	337	319	2,614	2,573	785	681	740	676	1,525	1,357
No. La., Ark.	55.0	41	45	74.5	81.8	109	111	543	497	234	242	517	519	751	761
Rocky Mt.	54.2	50	46	78.1	71.9	216	203	1,876	1,897	122	133	613	608	735	741
California	90.0	453	473	60.8	63.5	1,368	1,424	16,114	15,914	10,346	10,524	86,540	87,009	96,886	97,533
Total Reporting	85.8	2,823	2,879	77.1	78.6	9,411	9,423	82,107	82,361	20,252	20,917	104,741	105,191	124,993	126,108
U. S. Total (d)		3,170	3,325					87,277	87,561	20,802	21,487	107,091	107,551	127,893	129,038
U. S. Total, 4-1-38(d)		3,093						92,245		18,918		103,149		122,067	

(a) Includes straight-run, cracked and natural blended.
(b) Includes stocks at refineries, in bulk-terminals, pipe lines and in transit.
(c) 12% of reporting capacity in this district did not report gasoline production.
(d) Estimated, U. S. Bureau of Mines basis.

Trends of Basic Figures

	April 1	March 25	April 1, 1938
Crude Production (*Bbls. daily*)	3,358,200	3,382,350	3,367,250
Crude Imports (*Bbls. daily*)	73,860	8,570	65,280
Crude Runs to Stills (*Bbls. daily*)	3,170,000	3,225,000	3,093,000
Gasoline Stocks (*Bbls. total*)	87,277,000	87,561,000	92,245,000
Gas & Fuel Oil Stocks (*Bbls. total*)	127,893,000	129,038,000	122,067,000

Crude Oil Production for the U. S.

(American Petroleum Institute figures)

	Week Ended April 1 Barrels	Mar. 25 Barrels	Mar. 18 Barrels
Oklahoma City	85,000	116,250	117,800
Total Oklahoma	422,200	451,450	446,500
Kansas	167,000	166,750	161,150
East Texas	372,700	372,850	372,850
Total Texas	1,334,450	1,324,900	1,319,700
Total Louisiana	260,400	261,900	263,050
Illinois	169,300	163,800	168,200
California	611,500	624,600	640,100
East of Rockies	2,746,700	2,757,750	2,744,050
Total U. S.	3,358,200	3,382,350	3,384,150
Crude Imports	73,860	8,570	73,860
Total New Supply	3,432,060	3,390,920	3,458,010

NOTICE

With the trend toward higher octane gasolines, the question of revision of the octane brackets in *OILGRAM'S* listings for Eastern Seaboard Districts has arisen. At the time the "65 octane & above" listing was incorporated in *OILGRAM*, 65 octane was considered by the trade as high octane.

It has been suggested that the "65 octane & above" listing no longer is representative of trade practice on the eastern seaboard inasmuch as the bulk of "regular" grade gasoline is said to run 68-70 octane and many "third grade" gasolines test 65 octane and higher. The suggestion has been made that the present "65 octane & above" listing in *OILGRAM* should be broken up into two or more listings.

OILGRAM would appreciate receiving the views of subscribers on this question.

The W. C. Platt Co.

Weekly Changes in U. S. Crude Oil Stocks*

(Thousands of barrels)

Grade or Origin	Mar. 11	Mar. 18	Mar. 25	Chng. from Mar. 18
Pennsylvania grade	5,545	5,516	5,487	— 29
Other Appalachian	1,452	1,433	1,403	— 30
Lima-Michigan	1,830	1,828	1,856	+ 28
Illinois-SW Indiana	12,200	12,054	11,892	—162
Arkansas	3,230	3,231	3,257	+ 26
Kansas	6,883	7,014	7,188	+174
Louisiana	13,999	14,323	13,997	—326
Northern	5,451	5,723	5,623	—100
Gulf Coast	8,548	8,600	8,374	—226
New Mexico	6,698	6,677	6,579	— 98
Oklahoma	68,869	68,847	69,648	+801
Texas	89,414	89,218	90,344	+1,126
East Texas	19,594	19,770	20,238	+468
West Texas	17,487	17,279	17,343	+ 64
Gulf Coast	20,216	20,633	20,554	— 79
Other Texas	32,117	31,536	32,209	+673
Rocky Mountain	20,950	20,860	20,630	—230
California	38,396	38,880	38,601	—279
Foreign	3,386	3,464	3,033	—431
Total U. S. Refinable	272,852	273,345	273,915	+570
Heavy in California	16,079	16,131	16,134	+ 3

*As compiled by U. S. Bureau of Mines.

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Coming Meetings

American Petroleum Institute, Division of Production, Pacific Coast Section, Hotel Biltmore, Los Angeles, April 11.

Michigan Petroleum Assn., 5th annual meeting, Detroit-Leland Hotel, Detroit, Mich., April 11, 12.

National Petroleum Assn., 36th semi-annual meeting, Hotel Cleveland, Cleveland, O., April 13, 14.

Fuel Oil Distributors Assn. of New Jersey, Asbury Park, N. J., April 13, 14.

American Petroleum Institute, Division of Production, Mid-Continent District, Skirvin Hotel, Oklahoma City, Okla., April 18, 19.

Oil Burner Institute, Hotel New Yorker, New York City, April 18.

Oil-World Exposition, Houston, Tex., April 24 to 29.

American Institute of Mining & Metallurgical Engineers, Open Hearth Conference, Cleveland, April 26, 27, 28.

Chamber of Commerce of the U. S., 27th annual meeting, Washington, D. C., May 1 to 5.

Petroleum Electric Supply Assn. and Petroleum Industry Electrical Assn., Rice Hotel, Houston, Tex., May 2-4.

Natural Gasoline Assn. of America, Hotel Tulsa, Tulsa, May 3-5.

American Gas Assn., Natural Gas Section, Tulsa, Okla., May 8 to 11.

American Institute of Chemical Engineers, Akron, O., May 9-11.

Virginia Oil Men's Assn., annual spring meeting, John Marshall Hotel, Richmond, May 11, 12.

National Battery Manufacturers Assn., Greenbrier Inn, White Sulphur Springs, W. Va., May 11, 12.

American Petroleum Institute, 9th mid-year meeting, Roosevelt Hotel, New Orleans, La., May 15 to 18.

National Oil Scouts Assn., Houston, Tex., tentative dates May 18-20.

National Assn. of Purchasing Agents (Oil Company Buyers' Group), annual meeting, Fairmont Hotel, San Francisco, Calif., May 21 to 25.

World Automotive Engineering Congress, sponsored by S.A.E. for New York, Hotel Pennsylvania, May 22-28; Indianapolis, May 29, 30; Detroit, Hotel Statler, May 31-June 2; San Francisco, Hotel Fairmont, June 6-8.

Illinois-Indiana Petroleum Assn., annual meeting, Robinson, Ill., June 3.

Pennsylvania Grade Crude Oil Assn., annual meeting, Hotel Hershey, Hershey, Pa., June 15, 16.

13th International Congress of Carbide, Acetylene, Oxy-Acetylene Welding & Allied Industries, Munich, Germany, June 25 to July 1.

American Society for Testing Materials, 42nd annual meeting, Chalfonte-Haddon Hall, Atlantic City, N. J., June 26 to 30.

American Institute of Mining & Metallurgical Engineers, regional meeting, San Francisco, July 10 to 17.

The Eastern United States Michigan Oil & Gas Exposition, Mt. Pleasant, Mich., Aug. 1 to 6.

American Society of Mechanical Engineers, New York, Sept. 4 to 8.

Oil Workers International Union, Hammond, Ind., Sept. 5.

American Chemical Society, Detroit, Sept. 9 to 13.

New Jersey Oil Trades Assn., fall outing, Sept. 28.

Independent Petroleum Assn. of America, 10th annual meeting, Ft. Worth, Tex., some time in October.

National Tax Conference, Palace Hotel, San Francisco, week of Oct. 16.

40th Annual National Automobile Show, Grand Central Palace, New York, week of Oct. 15.

National Safety Congress and Exposition, Chalfont Hadden Hall, Atlantic City, N. J., Oct. 16 to 20.

American Gas Assn., annual convention, New York, Oct. 9, 10.

The Catalyst—"Boss" or "Helper"?

By Arch L. Foster, Technical Editor

Now that refining technologists are in an enjoyable dither over catalytic cracking of heavy petroleum fractions, and over the applications of catalysis to a number of old and new methods in refining, all and sundry are led to wonder: What is a catalyst? What constitutes a catalytic reaction, and what will it accomplish what cannot be done as well by other, chemical means?

In catalytic cracking we claim to, and do, accomplish very complex reactions resulting in the formation of gasoline-type hydrocarbons of more complicated structure and possessing higher antiknock and volatility characteristics. By means of catalysts this is done at lower temperatures and pressures than have been common in conventional thermal cracking. Catalysts of both the bauxite (aluminum oxide) and "synthetic" types containing other compounds are employed to accomplish these results. What effect does the catalyst introduce to make these reactions practicable under less severe conditions?

A characteristic of catalysts is that the outer or contact surface is multiplied many times by the existence of innumerable pores which improves the intimacy and completeness of the contact made with either vapor or liquid. In some older methods employed in sulfuric acid manufacture and in reducing reactions, metals are deposited in a finely divided state on pumice, asbestos or other porous or fibrous material, or is dispersed in a colloidal state in a supporting liquid medium, to increase contact surface.

In catalytic cracking of petroleum oils by means of bauxite or other porous or finely divided catalysts, some technologists have asked how much of the reaction actually taking place is catalytic, and how much is pyrolytic. Does the catalyst promote a reaction because of some influence which is obscure to us or does it serve as an intimate *heat conveyor* by which the vapors to be cracked are brought to a cracking temperature quickly and uniformly? Or has it both effects, and therefore in what degree is catalysis of hydrocarbon decomposition a thermal and also a "catalytic" reaction?

Gases may be polymerized by purely thermal means. We know that from many commercial operations. Oils may be cracked by the same methods as billions of barrels of cracked gasoline attest. In burning from the catalyst the carbon which forms, to the extent of 11-13 per cent of the charge we are told, the temperature of the catalyst is raised up to 900-1800 degrees Fahr., indications are. Does the reaction then, when vapors are admitted, become a thermal one or does the catalyst convert thermal to chemical energy, as some believe?

Various theories have been advanced to explain catalytic action, and different authorities have devised different explanations for the effect. Ostwald, the famous German chemist, believed that a catalyst is a substance which merely accelerates a chemical reaction to a much higher rate, rather than a source of energy. This theory would require that only those reactions can be catalyzed which in the absence of a catalyst still proceed at very slow rates. Bredig, a contemporary of Ostwald, shared the ideas of the latter, but did not believe that the amount of product formed by catalysis necessarily has any direct mathematical relationship to the amount of catalyst used. Some investigators point out that catalysis appears to induce reactions which otherwise will not occur at all, so far as the chemist can observe, and that therefore Ostwald's theory leaves something to be desired as an explanation.

The theory of Ipatieff, which has received wide attention, is briefly that the catalyst is a transformer of heat and other forms of energy into chemical energy, effecting a decomposition at much lower temperatures than is otherwise possible. Ipatieff also considers that an interaction takes place between catalyst and reacting substance by which an intermediate, probably loosely combined product is formed, which later breaks up to form the final product which does not include the catalyst, the latter being regenerated for further use. Without going into further details of Ipatieff's theories, details which are necessary to present if

(*Continued on page R-142*)

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Catalysis Shows How to Rebuild Petroleum for Today's Needs R-123

Petroleum Division of the American Chemical Society meeting at Baltimore hears group of papers dealing with methods by which refiners are rebuilding petroleum by chemical processes.

Temperature Effects of Catalytic Cracking Studied by Researchers R-128

Drops in temperature as well as rises accompany certain catalytic reactions in cracking processes. Metals compared in catalytic effects.

Gum and Sludge Troubles Traced to Engine Metal Catalysis R-129

Gum inhibitors in gasoline and sludge inhibitors in motor oil should include "metal deactivators" to prevent catalytic effects. Two-thirds of oxidation and deterioration of oil due to catalysis by engine metals.

Aromatization of Some Homologues of Cyclopentane and Paraffins in the Presence of Platinized Carbon, by B. A. Kazanski and A. F. Plate R-134

N-octane, cyclopentanes and other aliphatic hydrocarbons are converted to benzene-type unsaturated products, using a carbon catalyst activated with platinum.

5 to 10% Chromium Content Coming for Cracking Still Tubes, by Martin Fleischmann R-136

Concentration on cracking tube steels to fill the gap between the 5 Cr-Mo and stainless types yields new data on qualities suitable for more severe service.

Commercial Gum Inhibitors Found Effective in Polymer Gasoline, by W. B. Ross and L. M. Henderson R-140

Stabilization of polymer gasoline toward gum formation is found little or no different than in conventionally cracked gasoline.

Welding High Pressure Piping by New Acetylene Method, by Arthur N. Kugler R-141

Improvement in weld quality, coupled with savings in time and materials, makes multilayer welding technique with oxy-acetylene attractive for high pressure piping.

Activities of Equipment Manufacturers ... R-143

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Refining Technology

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Catalysis Shows How to Rebuild Petroleum For Today's Needs

By Arch L. Foster, Technical Editor

ANNOUNCING the symposium on catalytic methods presented this week before the petroleum chemists at Baltimore, Dr. C. R. Wagner pointed out that the refining industry is rapidly adopting the methods of the chemical industry. Instead of taking from petroleum the products naturally found therein and using them as such, the refiner is rebuilding them by chemical processes to yield the products with properties which make them far more efficient for their several purposes. Of two hundred million dollars or more which Dr. Wagner estimated will be spent by refiners for equipment and processes in 1939 a large portion will be used to take advantage of new developments in catalytic methods.

The reactions discussed at this meeting, and the processes which are based or may be based on them are more important to the refining industry than any technical advances which have been made since thermal cracking became a commercial success. They are of far greater importance than any which can be seen in the offing.

The half-dozen types of chemical reactions discussed at the A.C.S. meeting point indubitably the directions in which motor fuel technology of tomorrow will go. Anti-knock quality and volatility, the prime prerequisites in motor fuels are improved by these methods.

Straight-chain hydrocarbons have been the bane of the motor fuel refiner since "anti-knock" quality assumed its present importance. Investigators showed methods at this meeting by which these products may be rearranged under *controlled* conditions to give those qualities most needed by modern fuels, by catalytic cracking and reforming, by alkylation, by hydrogenation, by isomerization.

Losses of charging stock by gas formation has plagued the refiner many years. By dehydrogenation of paraffin gases, by polymerization or alkylation, and by hydrogenation these paraffins and the olefins found along with them or formed from them may be converted to useful fuels of high, often of extremely high, anti-knock qualities, and with volatilities which are the most desirable for the engine's needs. Straight-run highly paraffinic naphthas may be isomerized to produce fuels of the highest anti-knock ratings, changing a liability into an asset, a fuel difficult to dispose of or use into a premium product.

All this has come about and is coming about by the application of research, of chemical knowledge to refining processes. The chemist is rummaging systematically through the storehouse of petroleum and finding raw

Dr. Hugh S. Taylor, Princeton University Department of Chemistry, who is co-author with John Turkevich of "Fundamentals in the Catalytic Ring Closure of Open Chain Hydrocarbons", presented before the Petroleum Division of the American Chemical Society in Baltimore this week

Dr. C. R. Wagner, chief chemist of Pure Oil Co. and secretary of the American Chemical Society's Petroleum Division, is a pioneer in polymerization of hydrocarbon gases. In announcing the symposium on catalytic methods for the Baltimore meeting Dr. Wagner pointed out that refiners now are going to chemical manufacturing methods

Dr. J. C. Morrell, associate director of research, Universal Oil Products Co., is co-author of a group of three papers on catalysis of petroleum presented before the petroleum division of the American Chemical Society. In recent years Dr. Morrell has been closely associated with Dr. V. N. Ipatieff who probably has done more development work in the field of catalysis than any other man in the world

material. He is manufacturing from that material finished products that will revolutionize both the automotive and the petroleum industries.

Probably the most interesting and useful of these new developments is that of alkylation of olefinic gases. By polymerization of olefins, a new product of higher molecular weight has been produced which must be hydrogenated to yield an isoparaffin suitable for premium motor fuels or for aviation superfuels. By adding a paraffin or isoparaffin to an olefin, a higher boiling product is formed which is also an isoparaffin accomplishing essentially the same result in one step that with polymerization-hydrogenation requires two steps.

Alkylation Will Help Aviation Fuels

Aviation in particular will benefit from recent advances in the alkylation of hydrocarbons, to produce very high anti-knock fuels at low cost, Drs. Gustav Egloff and J. C. Morrell, Universal Oil Products Co. technologists, told the Petroleum Division chemists. In an exhaustive summary of recent developments in alkylation of different hydrocarbons, they showed how low grade (40 octane number) gasoline can be improved to 65 octane number by alkylating it with butene and propene gases from stabilizer reflux at minus 4°F. with 5 per cent of anhydrous aluminum chloride, increasing the weight yield of the gasoline by 35%.

Aluminum and zirconium chlorides can also be used to alkylate isoparaffins with olefins at relatively low temperatures (minus 58°F. to 167°F.). Octane numbers up to about 87 are obtainable with yields up to 80% or more. Butane-butene fractions from cracking plant stabilizers can be concentrated and alkylated directly using sulfuric acid to produce 90 octane number motor fuel, they pointed out. This process has been applied commercially, it is understood, in one or more plants.

Concentrated (100 per cent) sulfuric acid will alkylate isobutane with propene in yields equal to 122% of the isobutane, at 86°F., giving an octane number of 90-91. Isobutane treated with butenes in the presence of 97% sulfuric acid will give yields up to 148% of the isobutane and octane number up to 90, they showed from the literature on the work of Dunstan and collaborators. The number of variations in reactions and products producible between various hydrocarbons now appears to be without practical limit.

Benzene may be alkylated by olefins to form substituted aromatics. Butadiene—a diolefin—when heated with ethylene forms cyclohexene and continued heating produces benzene at temperatures above 1030°F. Suggestion is made in the literature that benzene formation from cracking ethane is produced by the formation of buta-diene and of ethylene and their alkylation in this manner. This may also explain in part the formation of benzene, toluene and other aromatics from the thermal polymerization of cracked still gases, which has been observed by Wagner and others.

Benzene may also be alkylated by olefins in the presence of solid phosphoric acid. Heating benzene vapors and cracked still gases at 500°F. and 50-75 pounds pressure results in motor fuel of 90-100 octane number and a distillation range mainly between 149°F. and 212°F., according to the literature.

Temperatures and Pressures

Alkylation is favored by low temperatures and high pressures, when using complex alkali-aluminum halide salts, F. H. Blunck and D. R. Carmody of Standard Oil Co. of Indiana have discovered. At 400°F. and 1000 pounds pressure favorable reactions were obtained, while at 900°F. pressures of several thousand pounds were required to produce alkylation with reasonable yields.

Good yields were obtained by reacting isobutane, ethylene, propene and i-butene in varying proportions and combinations using these complex salt catalysts. The catalysts were formed by fusing mixtures of alkali halides with aluminum chloride and depositing the resulting salt on pumice. Pumice itself was shown to have no catalytic action under the conditions used. The catalyst chamber was double extra-heavy seamless steel tubing, the heads fitted with copper gaskets. Lithium- and sodium-aluminum chlorides were found to have the greatest activity, the sodium salt requiring the lower temperature for satisfactory reaction. The corresponding potassium salt had little activity even at 600°F.

The catalysts' activity declines rapidly with use, and after experiments were found to be covered with a heavy carbon deposit which penetrated the interior of the catalyst particles. Catalyst life decreased with temperature rise, while selectivity toward alkylation increased at higher temperatures, they determined. Feed rates of higher than 4.0 volumes of gas per hour per volume of catalyst showed a falling off in reaction rates and more unsaturated products were formed.

With the lithium salt isobutane and propene gave 10 per cent to 18 per cent yields, in which C_6 to C_{10} hydrocarbons predominated. The entire range of paraffins and olefins up to at least C_{10} were represented in the reaction products, they found. The sodium salt gave much higher yields, 60% to 93% in some cases, between isobutane and isobutene at 400°F. A mixture of 23% olefin and 77% paraffin yielded 60% of product, while 5% olefin and 95% paraffin showed a 93% yield with this catalyst.

Promising Reactions

The most promising reaction found when studying the sulfuric acid alkylation of hydrocarbons other than the butene-butane reaction reported last year are those between propene with isobutane and butenes with isopentane, S. F. Birch, A. E. Dunstan, F. A. Fidler, F. B. Pim and T. Tait of Anglo-Iranian Oil Co. Ltd.'s research department have decided. These two reactions give good yields of high octane gasoline, consisting chiefly of isoheptanes and isononanes respectively.

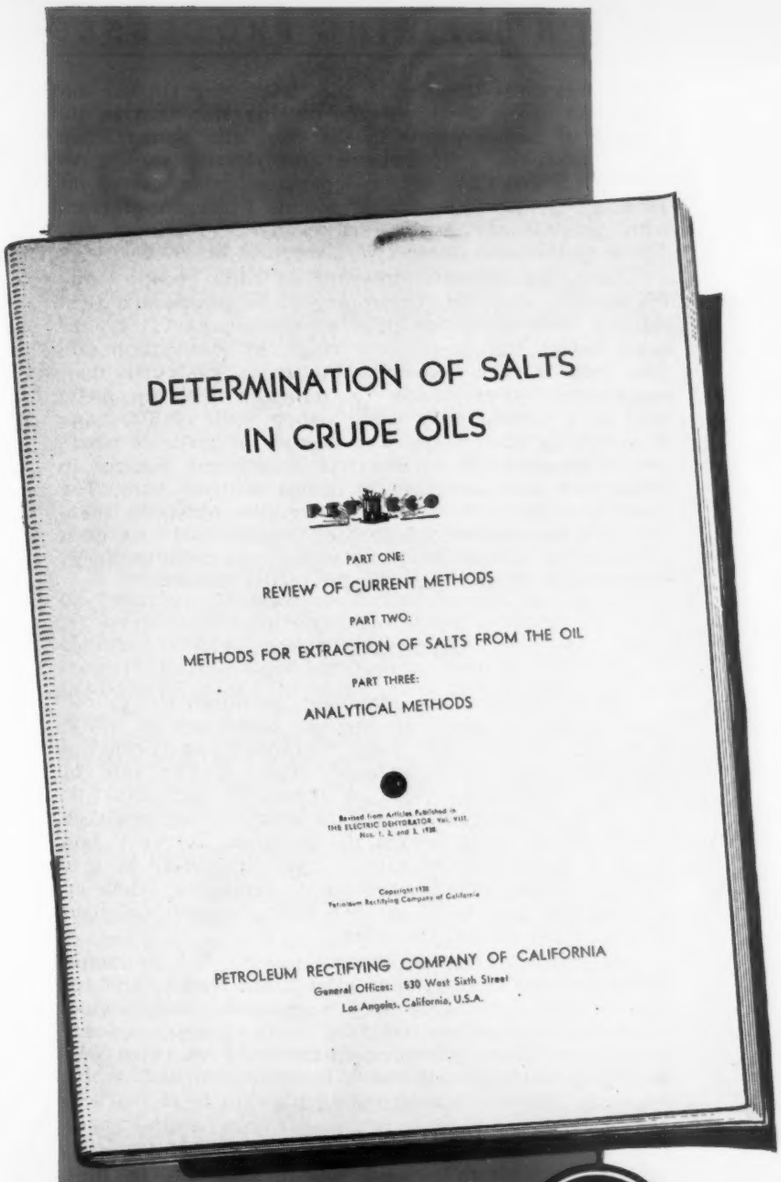
Technical development of these reactions, however, must wait on the work of reducing the amount of acid required for completing the reactions, they stated. When the acid layer in the reaction mixture is diluted with water a considerable percentage of unsaturated hydrocarbons is released, a characteristic result with these reactions, they find.

The yield from propene and isobutane was 124% of finished gasoline based on the olefin taken, with octane number of 82.5; 1½ cc. of lead raised this to 93.3 octane number. Isopentane and butene-2 gave 221% of the olefin used, presumably a volume figure, with octane number of 85, which is raised to 95 by one cc. of lead. The propene-isobutane product consisted chiefly of 2,4- and 2,3-dimethyl pentane. However, the formation of some 2,2,4-trimethylpentane indicates that under the conditions employed (100.6% acid, 68°F.), some isobutane is dehydrogenated to the corresponding butene and then alkylation takes place between this butene and the isobutane.

Reaction of butene-2 with isopentane gives higher yields than propene-isobutane, improves the volatility of the isopentane which is too volatile to use in too large amounts in aviation fuels, and a higher octane number. It consists mainly of isononanes, such as 2,2,5-trimethyl hexane boiling at 255-257°F., although some isodecane (2,2,6-trimethylheptane) was identified.

In these reactions addition of one to the other appears to take place through a methyl group on the isoparaffin, rather than through a secondary or tertiary carbon of the chains. Ordinarily the hydrogen on a secondary or tertiary carbon are found to be more reactive than is the hydrogen on a primary carbon.

Addition of propene to isopentane does not give such



Eliminates The Trouble By Removing The Cause

The initial approach to a salt extraction problem is to determine accurately the amount and character of the salts present in the crude. Various salt determination methods are being used for this purpose, some of which are reliable while others definitely are not

Realizing that salt determination procedure is engaging the close attention of refinery technicians, the Petreco laboratory staff has spent several months making critical comparisons of certain methods now commonly employed, the results of which have enabled us to offer the industry new and improved methods.

These methods have been published in permanent bulletin form under the title "Determination of Salts in Crude Oils", which is available without charge to refinery operators and employees The appended coupon is provided for your convenience

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good results, the acid requirement being high, the yield low and the octane number unsatisfactory, 73 for the fraction boiling between 104° and 365°F., indicating formation of long straight chain addition products rather than more complicated iso-paraffins.

Isomerization, Aromatization

In the presence of aluminum chloride using water as a promoter, either cyclohexane or methylcyclopentane may be isomerized to an equilibrium which will contain 20-25 per cent of methylcyclopentane, A. L. Glasebrook and W. G. Lovell, General Motors Research Laboratories have found. No tar or gas formation occurs in this reaction, and the resulting equilibrium composition appears to be essentially independent of the catalyst concentration, also independent of which product is started with, they reported to the chemical society.

Using aluminum bromide reaction was more vigorous, producing tar, gases, and products of lower and higher molecular weights than the starting material. Dimethylcyclohexane, dicyclohexyl and dimethyl dicyclopentyl were among the side reaction products which probably form with the bromide catalyst. Water was necessary to carry on the reaction, which showed an induction period before active reaction began. At room temperature mixtures of the reactants showed little if any results after several days. When brought to the boiling point the reaction started within 15 minutes, they found.

The equilibrium between the final products varied between 12.5% methyl cyclopentane at 77°F., to 25.6% of the same isomer when reaction was held at 171°F. which is about the maximum conversion of the hexane to methylcyclopentane achieved by these investigators. Tables of refractive indices found from mixtures of pure products were dependable in determining the amount of conversion which had occurred without exhaustive fractionation to make the determination.

Isomerization

The isomerization of hydrocarbons, that is, changing the structure of hydrocarbon molecules to different forms to obtain different properties, seems destined to wide and practical application in the petroleum industry, Gustav Egloff, V. I. Komarewsky and George Hulla of Universal Oil Products Co., observed. Isomerization takes rank in importance with hydrogenation and dehydrogenation, polymerization, alkylation and aromatization as important and effective tools for the refiner to use in changing his products from what they are to what he wants.

In an exhaustive study of the voluminous literature on isomerization of a large number of hydrocarbon types, these investigators pointed out that the actual mechanism of isomerization of paraffins may take any of three courses. The most likely one is the dealkylation of the paraffin into a paraffin and an olefin, by breaking a C—C bond, and the recombination of these into an isomeric molecule of different structure. For example, in the presence of aluminum chloride and hydrochloric acid, n-butane is changed to isobutane at 175°F. and 525 pounds pressure, 13% of isobutane being produced in four hours. With the same catalyst, n-pentane is changed chiefly to isopentane, with some butane and saturated products boiling higher than n-pentane. Aluminum bromide is a stronger catalyst, and in the absence of a halogen acid forms 56% of isopentane from the normal paraffin.

N-hexane treated with $AlCl_3$-HCl for three hours at about 70°F. and atmospheric pressure gives 55% of isohexanes, also 20-25% of lower and higher boiling hydrocarbons, 6% of isobutane and some pentane, n-octane heated for three hours with the same catalyst at 405-410°F. and 1050 pounds hydrogen pressure gives 23.3% of iso-octanes, with other products. Cycloparaffins may isomerize in five different ways, the three main ones being ring rupture and formation of an olefin; change of ring size, that is, the number of carbon atoms in the ring, and isomerization of a side-chain. For instance methylcyclohexane gave 50% of 1,2- and 1,3-methyl cyclopentanes, when heated for 26 hours at 400°F. and 5250 pounds hydrogen pressure with molybdenum disulfide as catalyst. Platinum catalyzes cyclo-octane to methylcycloheptane at 300°F.

Aromatics isomerize by shift of alkyl groups along the benzene ring; by rearranging alkyl groups and then shifting them along the ring; by shifting phenyl groups along indene and naphthalene rings; by dissociation into free radicals with recombination under molecular rearrangement; by cyclization to aromatics with an olefin bond in a side-chain by using strong acids or P_2O_5, and in numerous other ways. The number of methods which can be employed to achieve widely different changes in composition and structure is almost without limit. The great practical problem is to determine which of these will give the commercial product most needed and most valuable for special products, motor and aviation fuels, solvents and others of most value to the industry.

Aromatization

Normal heptane is aromatized quantitatively to toluene in the presence of chromic oxide gel at 878°F. Hugh S. Taylor and John Turkevich of Princeton University chemical department reported. The rate of flow of hydrocarbon vapor is important and must be slow, a sharp decrease in yield of toluene being produced when pushing rates beyond the optimum. A vapor rate equal to liquid flow of nine cc. per hour over 15 gm. catalyst showed 100% conversion to aromatics, while increasing the rate to 27 cc. per hour dropped the yield to 69% of the charge, they said.

As temperatures are boosted above the optimum, cracking of the charge takes place more readily, and beyond 980°F. cracking is very pronounced, they stated. In aromatizing olefins cracking takes place more extensively at any given temperature than with the corresponding paraffins. Hydrogen is evolved in both cases, indicating the unsaturation taking place to form the benzene nucleus.

The catalyst was prepared by precipitating the oxide with ammonia from chromic nitrate solutions. In time the activity of the catalyst was reduced due to poisoning by products formed by side reactions. It may be regenerated by careful heating in an atmosphere of oxygen and gases such as nitrogen, time of regeneration decreasing with increase of oxygen concentration. Care must be used with gel-type catalysts that heating does not reach too high a temperature and produce sintering, which permanently decreases the activity of the catalyst.

Water, oxygen and other water-forming gases, ethylene and other hydrocarbons are catalyst-poisons. The ethylene evidently forms polymers which adhere to the catalyst surface. The presence of hydrogen forms ethane which is not a poison. Oxygen treatment or "burning" revivifies the catalyst in each case and properly done has no decreasing effect on its activity, they found.

Dehydrogenation and Hydrogenation

The rapidly increasing commercial value of lower molecular weight olefins led to the study of dehydrogenation catalysts, with the result that alumina activated with chromic oxide has been found to be the most active, practical catalyst for reducing paraffins to the corresponding olefins, E. C. Williams of Shell Development Co. reported. An alcohol production capacity, from olefins, of probably 200,000,000 pounds per year is operating in this country, he estimated, in addition to the olefins used for gasoline manufacture. Conversion of the surplus of paraffins by catalytic dehydrogenation is relatively simple.

Chromic oxide gel is precipitated on prepared alumina to obtain the best qualities of each, the temperature ruggedness of the alumina and the high conversion capacity of the chromic oxide, which latter shows its greatest activity at 750°F. but is destroyed at 930°F. Small amounts of water are added to increase the life of this catalyst, 0.1 mol % being added to isobutane.

Deposition of carbon on the catalyst reduces its activity which may be restored by careful heating in a stream of air diluted with nitrogen, Williams stated. This catalyst has proved to be active after more than 200 regenerations, experience has shown.

100 Octane Fuels

Taking a practical viewpoint of the synthetic manufacture of 100 octane number aviation fuels, this octane rating can be obtained by blending hydrogenated aviation gasoline, hydrogenated polymerized olefins with or without isopentane to give added volatility, E. V. Murphree, C. L. Brown and E. J. Gohr of Standard Oil Development Co. reported. Aircraft of 35 tons weight are in regular service now. The airplane powerplant's output has been increased fourfold and cruising speeds have been raised from 100 to 200 miles per hour in the last ten years, so the advantages of extremely high octane number fuels are obvious.

Blends of the three agents mentioned show 100 octane number with small quantities of lead, they stated, and also meet the volatility specifications of the U. S. Army, and the British and French Air Ministries. One of the difficulties with iso-octane and similar high octane number fuels is their narrow boiling range, which does not permit them to be used without blending with other products usually of lower octane range. Furthermore, the high pressure hydrogenation of the tri-isobutylene which is also produced when polymerizing isobutylene provides an excellent source of a safety fuel for the present studies on that field, when the hydrogenated product is blended with relatively high-boiling naphthas of 80-90 octane number, these authors stated. Hydrogenated triisobutylene has a boiling range of 336-392° F. and 98.5 octane number, making it highly suitable for ultra-high octane number blends.

To produce hydrogenated aviation gasoline, heavier-than-gasoline petroleum fractions are heated and brought into contact with a rugged, long-lived catalyst in the presence of hydrogen. The hydrogen is prepared by heating steam and natural gas together, forming also carbon monoxide, which is reacted under heat with more steam to form carbon dioxide and more hydrogen. The new catalysts are said to be very rugged, resistant to sulfur poisoning, and to be kept on continuous operation for about a year. The same general system is used to hydrogenate di-isobutylene (iso-octene), without the cracking step.

Yields of aviation gasoline of 50-75% per pass are obtained, with final yields of 80-95%, as the plant is operated by Standard Oil Co. of Louisiana. Distillation of the gasoline shows an initial boiling-point, 109° F., final boiling-point, 272° F. This is produced from a heavier stock with a 348-572° boiling range.

Lead susceptibility was reported by these authors for the hydrogenated gasoline as slightly higher than that of straight-run aviation gasoline as has formerly been widely used. Mixtures of hydrogenated aviation fuel and the hydrogenated iso-octene with three and six cc. of lead show octane numbers of 102 and 104, respectively, they found, with boiling ranges of 108-357° F. and 108-356° F. respectively.

The chief use for a process for hydration of olefins is the conversion of ethylene and propene in refinery cracking still gases to ethyl and propyl alcohol, respectively. Recent investigations have shown that sulfuric acid in varying concentrations is a suitable catalyst for this purpose, W. H. Schiffler, M. M. Holm and L. F. Brooke of Standard Oil Co. of California report. Ethylene can be hydrated to form ethyl alcohol and propene similarly can be used to produce isopropyl alcohol in good yields by the use of acid of medium concentration, their experiments show.

Conversion of higher olefins such as butenes was shown to be impractical with sulfuric acid as the catalyst, because of the polymerization of the butenes. Their work did not go further in this report, on hydrating the higher olefins.

Ethylene is hydrated at a fairly good rate by 70% sulfuric acid at atmospheric pressure and 302° F., they find. Propene is hydrated eight times as rapidly by the use of atmospheric pressure, 55% acid and temperatures between 194° and 275° F. One drawback to ethyl alcohol formation is the low concentration of alcohol in the condensate, which normally ran about 10%, requiring expensive rectification to obtain concentrated alcohol. Pressure increase causes increase in ether formation; at atmospheric pressure the ratio of ether to alcohol formation varied from zero to about 0.5; at 65 lbs. gage pressure as much as two volumes of ether to one of alcohol were formed, they found. In commercial practice the formation of the undesired product can be reduced to small proportions by recycling that product, since ether-alcohol formation is an equilibrium reaction. Reacting at a pressure of 45 pounds increases the alcohol concentration in the condensate from 9-10% to 17% in the case of isopropyl alcohol. Little if any isopropyl ether was formed by increasing the pressure in making isopropyl alcohol.

Concentration of isopropyl alcohol in the condensate may be increased from 15% when produced at essentially atmospheric pressure to 82% when operating at 150 lbs., these authors found. The chief commercial consideration in making this alcohol is to obtain a reasonably high conversion per pass, reducing the amount of recycling which must be done. In several U. S. Patents Metzger reports that at 482° F. and 600 pounds ethylene may be converted to ethyl alcohol at the rate of 10% per pass, 12 volumes of alcohol being formed per 24-hour day per volume of acid, when using 41% concentration. With such a weak acid little if any ether is formed, they report.

One drawback in commercial operation is the dilution of the olefins by the paraffins present in refinery gases. With ethylene, the cost of acid concentration in a two-step method of absorption and subsequent hydrolysis is greater than the cost of concentrating the olefin gases. With propene the two-step method is the more desirable these authors say, especially when reaction is obtained in liquid phase.

Analyses of Foreign Crudes

"Properties of Typical Crudes From Fields of the Eastern Hemisphere," by A. J. Kraemer and E. C. Lane, is just published as Bulletin No. 401 by the U. S. Bureau of Mines. It contains 169 pages of analyses of the crudes of Europe, Asia, Africa and the East Indies. Along with the analyses are tabulations of production from the different areas, and maps of producing areas in each country.

The analyses are made according to the standardized Bureau Hempel method and are therefore comparable with results of analyses of other crudes published previously by the Bureau. In addition to analyses of crudes from the larger and better known producing areas of the eastern hemisphere, the bulletin includes samples from Albania, Greece, Taiwan, Borneo, Sarawk and Java, New Zealand, and the districts of Alberia, Egypt, Farsan and Angola, in Africa.

This bulletin is obtainable from the Superintendent of Documents, Washington, D. C., price, 20 cents.

Consultant Directory

The Association of Consulting Chemists and Chemical Engineers Inc. has recently published a membership directory, which may be obtained free by writing the secretary at 50 East 41st St., New York City.

This directory contains the names and addresses of members, their specialties, laboratory and consulting facilities and the special backgrounds of individuals and companies in the particular field of each.

Temperature Effects of Catalytic Cracking Studied by Researchers

DURING 1938-39 probably upwards of $50,000,000 will be invested by the industry in equipment for operating catalytic cracking processes. Research is being pushed intensively to discover all the facts possible to make these processes more efficient and to improve catalysts used for these purposes.

Study of the catalysis of different hydrocarbons and of different materials as catalysts is disclosing some most important and useful data for the refiner to use in perfecting catalytic operations. Control of these processes and of the properties of products obtained can only be perfected by the application of principles discovered by research. As shown below new data are being unearthed continuously which will aid in solution of the innumerable problems to be worked out in the commercial plant.

Cracking different hydrocarbons catalytically produced some interesting data on what happens to the temperature during the reaction, according to Gustav Egloff and J. C. Morrell of Universal Oil Products Co. Cracking cetene over activated silica-alumina at 450° F. was endothermic, causing a drop of 40° F. in the temperature of the catalyst bed. Cracking pentene caused a temperature rise in the first part of the bed, and a drop in the last portion, the temperature, maintained at 400° F. by outside means, actually varied between 370° and 448° F. in different locations. A temperature rise was also found in cracking butene in the same manner, they reported.

Cracking of n-octane, n-octene, cetane and cetene showed that much greater amounts of methane and ethane, ethylene and other very light hydrocarbons were formed in pyrolytic than in catalytic cracking. Gases formed catalytically contained up to 90% of olefins of C_4 and lower molecular weight, as compared to about the same percentage of paraffins by pyrolysis as reported by other investigators. Cracking n-octene at 707° F. produced in its iso-octene fraction 2, 3, 4-trimethyl pentane, 2-methylheptane, 4-methylheptane and 3-methylheptane, indicating isomerization by the catalyst, followed by migration of both double bond and methyl groups, and finally from other products found, cracking to butene, propene and pentenes.

Normal octane was cracked with the silica-alumina catalyst at temperatures from 525° to 570° F., with a liquid space velocity of four volumes of octane per volume of catalyst per hour. Two to 5.4 weight per cent of gases were formed, consisting mainly of methane, ethylene and propene. The cracked distillate contained principally of pentenes, butenes and propene. Normal octenes cracked more readily at 375° F. than did octane at the higher temperatures but produced more light gases, the gas formation ranging from 8.5% at 375° to 17.5% at 400° F. In cracking octenes isomerization was pronounced, 80% of iso-octene being formed. This catalyst proved to be a better isomerizing agent than zinc chloride or phosphoric acid on pumice.

Cracking of cetane at 500° F. was incomplete, only 7% of gasoline and 3.6% of an intermediate fraction being produced. Results appeared to indicate that the cetane molecule split at several points simultaneously with a tendency to form a C_3 and C_4 molecule along with one of the gasoline boiling range.

The catalytic effect of iron and its alloys in decomposing hydrocarbons to carbon and hydrogen may be "poisoned" by sulfur or other petroleum products, in cracking equipment and thus permit cracking in steel vessels without this decomposition effect. Studies reported by C. L. Thomas, Gustav Egloff and J. C. Morrell of Universal Oil Products Co. appear to support the theory that a thin coating of iron sulfide is formed on the metal surfaces, which prevents catalytic decomposition and the deposition of the hard carbon found in still tubes. This carbon is totally unlike the fluffy type produced in purely catalytic reactions, they stated.

Metals of the eighth Periodic Group, iron cobalt and nickel, show the strongest catalytic effects in reducing hydrocarbons to hydrogen and carbon, these investigators found in studying the catalytic action of metals. Nickel is a better catalyst than iron, while differentiation between cobalt and nickel has not been completed. They believe that intermediates metal carbides may be formed which later break up to restore the metal and release carbon; the exact mechanism is not known.

Among other metals, the alkali group appear to have no catalytic effects, only lithium and potassium having been studied by these researchers. Copper is a mild catalyst to form carbon and hydrogen. Gold and silver have little activity if any. Magnesium favors decomposition to hydrogen and carbon, forming carbides. Cadmium and mercury as vapors are said to form liquids from methane; zinc is inactive under the conditions studied by these men. Calcium has a mild effect in decomposing to hydrogen and carbon.

ALUMINUM forms carbides, producing total decomposition. Tin does not catalyze methane, and silicon and titanium are reported to be non-catalytic. Arsenic antimony and bismuth have no affinity for carbon and therefore probably would not catalyze decomposition to the elements. Vanadium, tantalum and columbium may form carbides and thus might cause liberation of hydrogen from paraffins. Chromium alloy tubes appear to reduce appreciably carbon formation in still tubes. Molybdenum and tungsten as powders form carbides with release of carbon and hydrogen; in the massive state they are practically non-catalytic.

Tellurium of all the metals in Groups VI and VII forms olefins, during which its hydride may be produced, finally releasing the hydrogen. Manganese in massive form has no activity, but as a powder forms carbides thus releasing hydrogen. Alloys show little activity also, except those containing iron, cobalt or nickel, which partake of the properties of those metals in the pure state. It is known that fire brick containing iron compounds disintegrate in the presence of methane at 800° F., the iron being reduced and carbon depositing in its place in increasing amounts causing rupture and eventual disintegration. The chief action therefore of metals is catalyzing total decomposition of hydrocarbons to the elements, forming carbides in some cases and releasing hydrogen.

Gum and Sludge Troubles Traced To Engine Metal Catalysis

THE DAMAGE which the presence of metals does to petroleum products is serious in many cases, it was brought out before the American Chemical Society at its Baltimore meeting. Copper in motor fuels promotes the formation of gums and shortens dangerously the time in storage before a gasoline may become unsuitable for use because of gum deposition, chemists showed.

Deterioration of lubricating oils in service has become a progressively troublesome problem. Recently chemists have determined that much of this deterioration of oils and the damage done to engines by corrosion is traceable to the catalytic effect of engine metals on the oils. The effects of the metals in motor fuels may be reduced or eliminated by the addition of chemicals which inhibit the catalytic effects, these chemists said. Similarly, coating of metal surfaces so that oil does not come into direct contact with the metal reduces greatly sludge formation and wear, they have found.

Gum formation in gasoline is promoted strongly by the presence of dissolved metals especially copper. Anti-oxidants used are also affected by the catalytic action of metals such as copper and the inhibiting action of these anti-oxidants is seriously reduced, F. B. Downing, R. G. Clarkson and C. J. Pedersen of the du Pont Co. have proved. Addition of a "metal deactivator" to inhibited gasolines will restore the inhibition period. For example five to eight parts per million of disalicylal ethylene diamine, made by condensing two moles of salicylaldehyde with one mole of ethylene diamine, added to a gasoline containing one part of copper per million will restore the original inhibition period of the gasoline, they have found.

This "metal deactivator" is not a gum inhibitor, nor is it oxidized by air even in solution. It appears to "blanket" the metal, preventing the latter from destroying the effect of the inhibitor. It has no undesirable effect on other additives such as tetraethyl lead or dyes. The addition of 0.001% of this product will completely kill the catalytic effect of one part per million of copper, and in general five to eight parts of deactivator to one part of copper is sufficient to eliminate the metal's effect.

After enough deactivator is added to stop the metal effect, addition of more deactivator has no effect, other than to fortify the gasoline against further metal contamination in storage or use, these men found. The deactivating effect is shown to be pronounced when it is shown that 40 to 1000 parts of inhibitor are needed to inhibit against the metal's catalytic effect, instead of the five to 10 parts for the deactivator.

In storing gasoline containing one p.p.m. of copper and inhibited with 0.0025% of p-benzylaminophenol, gum formed so fast as to make the gasoline unfit for use in six days. Adding 0.001% of deactivator, or 10 p.p.m., kept the gasoline satisfactory as to gum for six months. In contact with metallic copper a gasoline inhibited with 0.003% of the phenol derivative formed prohibitive amounts of gum in five days. With an inhibitor-deactivator containing 0.00225% BAP and 0.00075% deactivator, the same gasoline was satisfactory after 55 days, the data showed.

The use of this deactivator is recommended by these authors wherever any catalyst metal is present in the gasoline.

The addition of suitable organic solvents or salts, termed "solutizers," improves remarkably the efficiency of removal of mercaptans from light distillates, D. L. Yabroff of Shell Development Co. has found. These products, several of which have been tested and found efficacious, improve the solubility of the mercaptans in the caustic solution phase when added thereto. Several substances have proved to be of commercial importance and practicability, which the author promises to discuss in a later paper.

Most gasolines can be sweetened entirely in this process which will extract the mercaptans completely, Yabroff says. He determined that the ionization constants of mercaptans vary only slightly with difference in molecular weight. However, mercaptans with branched chain organic radicals are more soluble than are those with straight chains, he found. Increase in molecular weight, however, changes greatly the solubility of the mercaptan in water and its partition between water and hydrocarbon phases, and therefore greater molecular weight decreases the degree of extraction obtained with caustic solution.

A quick method for determination of aromatics in hydrocarbon mixtures has been developed by Aristid von Grosse and Richard Wackher, Universal Oil Products Co., which requires the use of an Abbe[8] or Pulfrich refractometer. It is based on the fact that all paraffinic hydrocarbons have a constant specific dispersion, while aromatics and olefins have a considerably higher dispersion.

The dispersion may be calculated from the equation,

$$\text{Dispersion} = \left(N^{To}_{H_{Beta}} - N^{To}_{H_{Alpha}}\right) \times 0.100000 \times \frac{1}{d_{to}}$$

where d^{to} and n^{t} are the indices of refraction for H_{Alpha} and H_{Beta} lines respectively at the same temperature. Traces of diolefins affect very little the determination, while any appreciable quantities of diolefins present may be removed with maleic anhydride, the authors say, the accuracy of the method can be increased by using the Pulfrich instrument they stated.

Determination of the gumming time of gasolines under conditions of one atmosphere of air may be found by determining the "10 mg. gum time" with oxygen at 100 pounds pressure and converting to atmospheric by using the factor of 1.25, D. L. Yabroff and E. L. Walters, Shell Development Co., have found by extensive experiments which are still in progress. The "10 mg. gum time" refers to the time required for the gasoline to develop 10 mg. of gum per 100 milliliters of gasoline.

These experimenters have developed a bomb test using oxygen at 100 pounds and by comparison with parallel tests under atmospheric storage conditions, determined that the "10 mg. gum time" varies from 30% to 75% of the "induction" period of the gasoline as determined by conventional methods. At the pressures used, they decided that at higher temperatures the dissolved oxygen in the gasoline was absorbed in the gum-forming reaction faster than it was added to the gasoline by solution and diffusion. Ratio of gum formation at 212°, 198° and 185° F. as compared to gum formation in air were 1.65, 1.34 and 1.28 respectively, which they consider supports this viewpoint.

The test developed is too long for daily use in refinery control work, they say, but believe it may be correlated with other tests for plant control.

Reduction of engine wear by an additive in lubricat-

ing oil appears to be due to the inhibition of the catalytic oxidation-deterioration effect of metals on the oil by the additive, F. B. Downing, G. E. Holbrook and J. H. Fuller of the du Pont Co. found in a series of exhaustive engine tests on treated and untreated oils. By coating the engine with a complete layer of lacquer in the one case to minimize the effect of iron and bearing metals as well as catalysts, and by washing the engine thoroughly in a boiling 5% solution of trisodium phosphate to clean the surfaces and obtain the maximum catalytic effect these investigators were able to show a considerable difference in oil deterioration.

These tests show that the total effect of the iron of the engine is greater than that of the bearing metals on oxidation and deterioration of oils. Also, the addition of 0.5% of a tricresyl phosphate-tributyl phosphite additive, made up of 80% of the phosphate and 20% phosphite, to the oil materially reduced wear and oil deterioration. Of the bearing metals studied, copper-lead is the most active catalytically, with babbitt somewhat less so, and silver-cadmium still less active, these authors reported.

The amount of sludge formed in a well-lacquered engine with new Cu-Pb, new Ag-Cd and new babbitt bearings clean, and in the same engine with the iron surfaces clean but bearings lacquered, showed nearly four times as much sludge in milligrams per 10 grams of used oil with untreated oils as with treated oils. The average for four runs in each case was 44.15 mg. for untreated oil, and 11.3 mg. for treated oil used under these four sets of conditions. The amount of sludge formed from the untreated oil, a solvent-extracted clay filtered Mid-Continent oil, was: clean iron lacquered bearings, 73.7 mg.; lacquered engine, new Cu-Pb bearings, 48.4 mg.; lacquered engine, new babbitt bearings, 25.0 mg.; lacquered engine, new Ag-Cd bearings, 17.5 mg. The corresponding values for the treated oil were 21.5, 7.8, 8.6, 7.4.

Wear on new bearings with untreated oil showed 34.38 mg. per sq. in. per 1000 miles for Cu-Pb, 2.16 mg. for Ag-Cd. With the treated oil the corresponding wear was much lower, 1.25 mg. for Cu-Pb and 1.02 mg. for Ag-Cd. In neither case was wear on the babbitt appreciable.

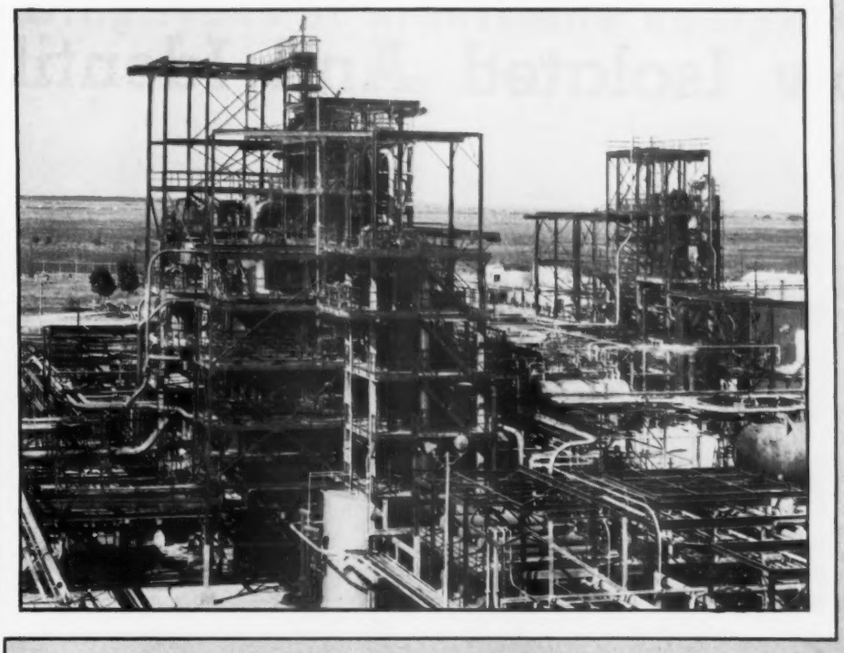
From all data collected, these authors concluded that two-thirds of the oxidation and deterioration of oil in a new engine is due to catalysis by engine metals. The reduction in wear and corrosion "is indicated as a corollary of the surface protective property of the phosphorus additive", they stated, and this conclusion was confirmed by the data obtained. The large wear reduction on new Cu-Pb bearings shown by the above figures, from 34.38 mg. to 1.25 mg. is considered to result from corrosion protection given by the additive.

Fractional distillation and fraction solvent extraction has each proved to be excellent methods for separation of a lubricating oil into its component parts, and to give a general idea of the approximate composition of the oil, K. A. Varteressian, M. R. Fenske and H. S. Smith of Pennsylvania State College have found. Distillation divides the oil into fractions varying successively in molecular weights, viscosity, and number of rings per molecule. Extraction divides the oil into fractions, the earlier of which contain mainly aromatic hydrocarbons, the intermediate ones containing the naphthenic types and the last fractions mainly paraffinic hydrocarbons.

Distillation of a light Pennsylvania lubricating oil showed that the fraction distilled had an average composition of $C_n H_{2n+x}$, where n equals 29.4 and x equals minus 4.8. The molecular weight varied from approximately $C_{22.5}H_{41.3}$ to $C_{42.1}H_{76.6}$, x varying between minus 3.3 and minus 7.6. Solvent extraction separates the constituents in the basis of variations in x values, which is the fundamental difference between aromatics, naphthenics and paraffin components, they pointed out. Aromatics are extracted first, and after about 50% of the oil has been extracted, practically all aromatics are removed therefrom. The last cuts have a nearly constant density of 0.850, average about 1.25 rings per molecule and differ considerably in molecular weight. Thus they appear to consist mainly of one-ring naphthenes with side chains. The aromatics appear poor in side chains, high in viscosity and with low viscosity indices.

Extensive work showed that extraction without appreciable reflux reduced the efficiency of extraction of aromatics. Separation according to molecular weight was also not so sharp as when reflux was used.

Propane dewaxing unit, Kellogg-built, Kendall Refining Co., Bradford, Penna. This unit dewaxes and deresins Pennsylvania neutrals and bright stocks.—Photo K. E. Laumer



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CLAY TREATING

Many Petroleum Nitrogen Compounds Now Isolated And Identified

IT SEEMS particularly fitting that in Texas, producing nearly one-half the crude petroleum of the United States, research should be directed toward discovery of the composition of that crude. Two major projects are under way at the University of Texas, investigating two types of compounds found in relatively small quantities in petroleum.

Nitrogen compounds are being studied by Dr. J. R. Bailey and a group of graduate students, the crude nitrogen base mixtures being obtained, incidentally, from California kerosine fractions. This work grew out of the A. P. I. project on petroleum nitrogen which was assigned to Dr. Bailey several years ago, and has been carried on with University funds and the co-operation of Union Oil Co. of California ever since. Pyridine and quinoline derivatives are the compounds which have been isolated and identified so far, and to quote Dr. Bailey, "This work is only just started."

More has been discovered in recent years on petroleum's naphthenic acids than on nitrogen bases, especially from the work of Julius von Braun, who died a few months ago in Germany. This surface of this problem has only been scratched, and Dr. H. L. Lochte of the University of Texas and his associates are delving rapidly into this field. Aside from the "pure" chemical angle, many of these products of both kinds may prove to have large commercial application for purposes yet unknown.

Nitrogen Compounds In Petroleum

More than a dozen organic nitrogen bases have been isolated from kerosine petroleum distillates and identified in the chemical laboratory of the University of Texas during the last few years. Two of these are derivatives of pyridine, C_5H_5N, in which a nitrogen atom assumes the position of one of the carbon atoms in the benzene nucleus. Eleven of them are homologs of quinoline, C_9H_7N, in which nitrogen replaces one of the carbons in the naphthalene nucleus.

One of the pyridines has been identified conclusively as 2,3,6,-trimethyl-4-octylpyridine, as reported before the Petroleum Division of the American Chemical Society this week by S. M. Roberts and J. R. Bailey. Structure has been determined by degradation of the pure base and by synthesis. The structure of the octyl group remains yet to be established, these authors stated.

Ten of the quinolines are, 2,-3-, 2,4-, and 2,8-dimethyl quinoline; 2,3,8- and 2,4,8-trimethylquinoline; 2,3,4,8-tetramethylquinoline; 2,3-dimethyl-8-ethyl-and 2,4-dimethyl-8-ethylquinoline; 2,3-dimethyl-8-n-propyl- and 2,4-dimethyl-8-n-propylquinoline.

Proof of the structure of the substituted pyridine referred to above has been accomplished by oxidation with fuming nitric acid to form berberonic acid, by formation of a phthalone with phthalic acid, pyrolysis of the octyl chain to form 2,3,6-trimethyl pyridine, and by high pressure reduction of the pyridine ring with the Raney nickel catalyst with a consumption of six hydrogen atoms per molecule.

W. N. Axe has isolated 2,4-dimethyl-8-ethylquinoline from the same kerosine distillate, and has proved its structure by oxidizing it to the corresponding acid with the carboxyl in the 8-position, using sulfuric-dichromate mixture; and by synthesis of the base from acetylacetone and ortho-ethylaniline.

The same author in collaboration with J. R. Bailey isolated 2,4-dimethyl-8-n-propylquinoline by multiple extraction of the mixed bases with hydrochloric acid. Its structure was proved by oxidation to the corresponding acid with chromic acid, and by synthesis of the base itself from methylacetylacetone and ortho-n-propylaniline.

As another section of the same work, R. A. Glenn and J. R. Bailey have isolated 2,3,4-trimethyl-8-ethylquinoline and have proved structure by chromic acid oxidation and by its synthesis from methylacetylacetone and ortho-amino-ethylbenzene.

ISOLATION and identification of 2,3,4-trimethyl-8-n-propylquinoline was accomplished by Bailey and L. M. Schenk. The original base was obtained by multiple acid extraction and its structure established by chromic acid oxidation and synthesis from methylacetylacetone and ortho-amino-n-propylbenzene.

Isolation of many of these bases has been facilitated by the discovery in the same laboratory a few years ago that the acid sulfite derivative of these products, which was used to separate them in the original mixture, could be reduced by "degasifying" the salt, driving off SO_2 by aeration under certain conditions to recover the base. This operation, combined with that of micro-fractionation discovered by the same corps of workers, have rendered the identification of these products less complicated and has speeded up the isolation and identification of the various compounds. By these methods a more exact knowledge of the composition of petroleum constituents has been made possible.

Petroleum Naphthenic Acids

Eight naphthenic acids have been isolated and identified by Kinney Hancock and H. L. Lochte. These products were isolated from the sodium carbonate wash of a California straight-run gasoline by fractional distillation at 50 millimeters pressure, and were extracted further from this distillate by sodium carbonate and hydroxide. A ninth acid has been isolated, which is believed to be the optical isomers of caphonanic acid, and work is continuing to determine the structure of its molecule.

The eight acids identified are; formic (qualitatively, by reduction of silver nitrate and mercuric chloride solutions), acetic, propionic, iso-butyric, n-butyric, iso-valeric and n-valeric, and dimethylmaleic anhydride. Efforts to isolate methylethyl acetic and trimethylacetic acids was unsuccessful, and little indication was found of these acids in the mixture studied, the authors stated. The propionic, butyric and valeric acids were isolated and identified by formation of their 2-alkylbenzimidazoles, and determination of boiling points, refractive indices and melting points.

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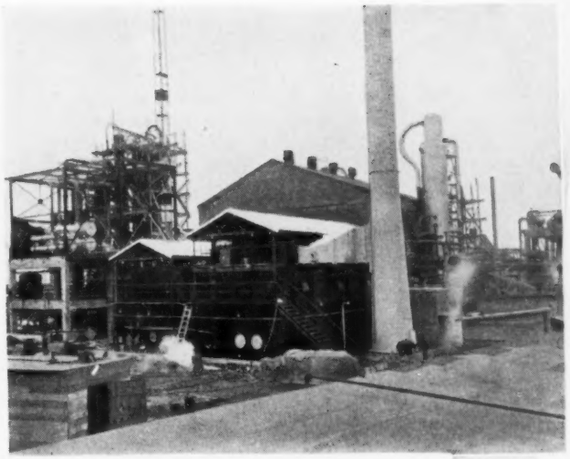

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PETROLEUM REFINING PLANTS

Aromatization of Some Homologues Of Cyclopentane and Paraffins

In the Presence of Platinized Carbon

By B. A. Kazanski and A. F. Plate*

(Translated by Process Management Co.'s Foreign Literature Service, from Jour. of General Chemistry, (U.S.S.R.), Vol. VII (LXIX) No. 2, pages 328-334 (1937).

ABSTRACT

Some paraffins, such as n-octane, isoparaffins such as di-isobutyl, di-isoamyl butyl cyclopentane, are converted to aromatic compounds by contact with a catalyst of carbon activated with platinum. Di-isobutyl gives 35% of aromatics in a hydrogen atmosphere, one of the products being p-xylene.

Iso-amylcyclopentane gives 35% yields of aromatics in an atmosphere of CO_2. N-octane in a nitrogen atmosphere gives 10% of aromatics, the permanganate oxidation products of which are benzoic and phthalic acids. Methyl-, ethyl-, and propylcyclopentanes apparently do not show this reaction. A highly active carbon for the catalyst base gives the highest yields.

IT WAS shown by Zelinski, Kazanski and Plate that cyclopentane and its simplest homologues—methyl-, ethyl- and propylcyclopentanes are hydrogenated in the presence of platinized carbon in an atmosphere of hydrogen at 300-310 degrees Cent.; in this reaction, the ring is ruptured and paraffin hydrocarbons are formed that possess an isostructure, as far as it is possible to judge from their elementary composition and physical properties.

In a study of contact conversion of some higher homologues of cyclopentane under the conditions indicated above, a quite unexpected phenomenon was encountered that was difficult to be foreseen in advance. It appears that normal butylcyclopentane, secondary butylcyclopentane and isoamylcyclopentane are not only hydrogenated with formation of paraffins in an atmosphere of hydrogen, but they also give a certain amount of aromatic hydrocarbons. In some cases, the refractive index of the products of catalysis was not only not lowered, as observed in contact conversions of lower homologues of cyclopentane, but was markedly increased,—a phenomenon observed in catalytic dehydrogenation of hexahydroaromatic hydrocarbons. We then carried out experiments in carbon dioxide and nitrogen, and these showed that aromatization proceeds under these conditions even more definitely, while hydrogenation with formation of paraffins takes place only to an insignificant extent, and in the gases liberated in this reaction, the hydrogen formed in aromatization is easily detected. As an explanation of the observed phenomenon, formation of the aromatic hydrocarbon can be assumed to proceed at the expense of the side chain of the compound, one carbon member of which becomes included into the five-member ring forming a six-member ring. Transformations of this sort are known to take place in case of derivatives of cyclopropane, cyclobutane and cyclohexane[1].

However, the fact that methyl-, ethyl- and propylcyclopentane do not give this reaction, while butylcyclopentane does, leads to an assumption that a different way is possible for the formation of the six-member ring, namely, cyclization of the side chain of the butylcyclopentane; the hydrindane formed can suffer a rupture of its five-member ring in the presence of an excess of hydrogen and form ortho-ethyltoluene as was shown by Turova Polak[2].

Thus, the first possible scheme of the reaction would result in mono-substituted homologues of benzine, while the second would give orthodisubstituted compounds. A detailed study of the products of contact conversion of normal butycyclopentane showed that this reaction results in formation mainly of orthoethyltoluene and a small amount of a monosubstituted homologue of benzine that gives, on oxidation, benzoic acid.

Consequently, in this case, the reaction proceeds mainly according to the second view. In order to test whether paraffins with branched chains are also able to close their chains forming six-member rings, di-isobutyl was subjected to contact conversion over platinized carbon, first in an atmosphere of hydrogen and then in an atmosphere of nitrogen. It was found that this compound underwent a considerable aromatizaztion forming paraxylene. Further experiments showed that even normal paraffins such as, for instance, normal octane can also be aromatized in this way forming ethylbenzene and orthoxylene.. This justifies a third assumption, according to which in an atmosphere of hydrogen, the five-member ring is first ruptured, then an intermediate compound is formed which is subsequently aromatized. It is possible that this can explain the reason why secondary butyl-

*This translation has been submitted by the Petroleum Division of the American Chemical Society. The Petroleum Division, however, assumes no responsibility for the facts and opinions presented in this paper, nor does it necessarily endorse statements made therein.

cyclopentane forms in an atmosphere of hydrogen a considerable amount of aromatic hydrocarbons, although 1, 1-methylethylcyclohexane that can be formed from the secondary butylcyclopentane by expansion of the five-member ring cannot be aromatized due to its structure[3]. On the other hand, the side chain of the secondary butylcyclopentane is of insufficient length to form aromatic hydrocarbons by ring closure.

Aromatization of hydrocarbons at temperatures as low as 300-310 degrees Cent. was not observed before for such simple hydrocarbons. Moldavski[4] and co-workers carried out catalytic cyclizations of paraffins containing 6, 7, 8 and 10 carbon atoms, working with chromium oxide at 470 degrees Cent., and, in all cases, they observed formation of gaseous and liquid olefins, which were absent in the present experiments. Selective dehydrogenation of six-member rings on the surface of platinum was observed in many cases; it is found that on this surface such systems can also be first created from open chain hydrocarbons and subsequently dehydrogenated. Future investigations will show whether other metallic catalysts are also able to bring about this effect. The present investigation reports on conversion of butylcyclopentane in an atmosphere of hydrogen, of di-isobutyl in an atmosphere of hydrogen and in that of nitrogen, normal octane in an atmosphere of nitrogen, di-isoamyl in an atmosphere of hydrogen. With isoamylcyclopentane and with secondary butylcyclopentane, only basic experiments were carried out, indicating that the aromatization phenomena take place. However, the products of the reactions were not investigated in detail. A single passing over the catalyst of these hydrocarbons results at the average in formation of 10 per cent aromatic hydrocarbons. The exact yield depends a great deal upon the catalyst and specifically upon the activity of the carbon on which the platinum is deposited. A catalyst for which a highly active carbon was used, gave a higher yield. The activity of the catalyst is lowered with time, but when carefully purified, hydrocarbons are used, the life span of the catalyst is extended to months with daily use.

A study of individual hydrocarbons showed that normal butylcyclopentane gave a mixture about 50 per cent of which consisted of 4-methyloctane together with a small amount of 2-ethyltoluene. When a catalyst containing 26 per cent platinum was used, instead of 20 per cent as previously, 10.9 per cent of the product consisted of aromatic compounds. In an experiment using carbon dioxide with a catalyst containing 20 per cent platinum on a carbon of lower activity, 16.8 per cent aromatic compounds were formed, as indicated by absorption in 2 per cent fuming sulfuric acid. In an experiment carried out in an atmosphere of nitrogen with a catalyst containing 26 per cent platinum, the product contained to a large extent unchanged butylcyclopentane. In all these experiments, butycyclopentane was charged with a velocity of 4-5 drops per minute at 305-360 degrees Cent.

Secondary butylcyclopentane, when passed over a catalyst containing 26 per cent platinum, gave 25.4 per cent aromatics, the remainder consisting almost entirely of paraffins containing no initial hydrocarbon. An experiment with isoamylcyclopentane was carried out under the same conditions as the preceding experiment, namely in an atmosphere of hydrogen. Under the same conditions, isoamylcyclopentane gave 31 per cent aromatics. When the experiment with isoamylcyclopentane was repeated in an atmosphere of carbon dioxide, 35 per cent of the products were aromatics.

Experiments with di-isobutyl in an atmosphere of hydrogen gave, under the above conditions, a product containing 35 per cent aromatics. Among these aromatic products, paraxylene was identified.

Normal octane was treated in an atmosphere of nitrogen. Its products contained 10 per cent aromatic hydrocarbons. The residue consisted almost entirely of normal octane. Oxidation of the aromatic compounds with permanganate gave benzoic and phthalic acid in approximately the same amounts.

Di-isoamyl was treated in a stream of hydrogen and gave 8.10 per cent aromatics, as shown by absorption with sulfuric acid. The sulfonated products were hydrolized and the resulting compounds nitrated. Trinitrometacymene was obtained. An increase in the temperature of the experiment to 350 degrees Cent. gave 17.39 per cent aromatics.

The inability of methyl-, ethyl-and propylcyclopentane to form aromatic compounds under similar conditions, as well as the capacity of paraffins with six and seven carbon atoms to undergo aromatization in the presence of platinized carbon are the subjects of continued study.

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Sulfurized Pine Oil Proposed As Diesel Fuel Additive

Blending of "sulfurized terpenes" in diesel fuel to reduce the ignition delay period of fuels low in cetane number and thus produce a fuel of high cetane number is claimed in U. S. Pat. No. 2,137,410, issued Nov. 22, 1938, to R. C. Moran and G. S. Crandall, assigned to Socony-Vacuum Oil Co.

The fuel is prepared by treating pine oil with elementary sulfur, forming a product containing 36.84% sulfur as distilled off at or below a liquid temperature of 175° C. (347° F.) in the still. This product is mixed with the diesel fuel, 2% giving an increase of 7.5 cetane numbers in the ignition qualty of a fuel originally of 50 cetane number.

A large number of "dopes" have been proposed and patented for improving the ignition quality of diesel fuels. Many of these are organic nitrates, nitrites, peroxides and other materials which have the property of speeding up the ignition time, that is, the time between the injection of the fuel into the heated air in the diesel cylinder and the start of combustion. A 2% mixture of this terpene product with a fuel would raise the sulfur content by 0.74%, which may or may not clash with diesel fuel specifications as now used by some diesel operators.

Socony-Vacuum Oil Co. officials say that this product has not been used so far in any commercial fuel.

Refining Wyoming Black Oils

A progress report entitled "Chemical and Refining Study of Some Wyoming Black Oils" has been prepared by H. M. Thorne and Walter Murphy of the Laramie, Wyo., experiment station of the U. S. Bureau of Mines as Report of Investigations R. I. 3423.

Demand for asphalt and road-oil products is the principal factor regulating production of these crude oils and this holds the average daily production to 13,000 barrels as compared with an estimated potential of existing wells of 56,000 barrels, it is stated. These crude oils cannot command a more favorable position in the markets of the Rocky Mountain region until their characteristics are better understood and suitable and efficient refining methods are developed, the authors find.

"The experiments demonstrated that large amounts of coke and gas are formed by cracking topped black crude oils to dry coke. It is believed that reducing the crude oil to a penetration asphalt and cracking the intermediate distillates would prove more economical. Experimental studies in which asphalts are recovered and intermediate distillates are cracked are now in progress," it was stated.

5 to 10% Chromium Content Coming For Cracking Still Tubes

This article is a condensation of a paper presented before the Western Petroleum Refiners Association meeting at San Antonio, March 20-22

By Martin Fleischmann†

CRACKING tube operating conditions are being produced in petroleum refineries under which the 4-6% chromium, 0.5% molybdenum steels may not have sufficient strength, oxidation or corrosion resistance, or structural stability to assure the demanded service life. The most economical solution is believed to be the use of steels containing 5 to 10% chromium with suitable molybdenum content. Silicon or silicon plus aluminum will add beneficial effects.

Our recent work has been concentrated on steels to fill the gap between the 5 Cr-Mo and the stainless types. As a result the following commercial steels are available. The price ratios for the various compositions are indicated.

Table 1

Type* Steel	Cr	Mo	Si	Relative Cost
A	4.00-6.00	0.45-0.65	0.50-1.00	1.00
B	4.00-6.00	0.90-1.10	0.50-1.00	1.07
C	4.00-6.00	0.45-0.65	1.00-2.00	1.06
D	4.00-6.00	0.90-1.10	1.00-1.50	1.12
E	6.00-8.00	0.45-0.65	0.50-1.00	1.11
F	6.00-8.00	0.90-1.10	0.50-1.00	1.16
G	6.00-8.00	0.45-0.65	1.00-1.50	1.14
H	6.00-8.00	0.90-1.10	1.00-1.50	1.18
I	8.00-10.0	0.45-0.65	0.50-1.00	1.50
J	8.00-10.0	0.90-1.10	0.50-1.00	1.62

*All contain a maximum of 0.15% C and 0.50% Mn.

In the past 10 years of development of alloy steels for oil refinery service the following six factors have been considered:

1. Strength at elevated temperatures
2. Corrosion resistance in hot petroleum products
3. Oxidation resistance
4. Structural stability
5. Retention of ductility after prolonged service
6. Suitable room temperature properties to permit fabrication and installation.

Of the two tests for strength of steels at high temperatures, the creep test and the stress-rupture test, the latter is preferred in evaluation of steels for use in cracking still tubes because it not only provides a definite basis for design but indicates the influence of time, temperature and stress on the surface and structural stability, and the hot ductility of the steel. It is difficult to consider strength separately from surface stability because the latter determines the ability to carry a given stress for a prolonged time.

The stress-rupture characteristics at 1200 and 1300° F. of some of the steels of Table 1 are given in Table 2. Additional work is in progress on a steel with 12% chromium which may be needed for the most corrosive conditions. Complete data for the commercial steel will be available soon.

†Metallurgical engineer, Steel and Tube Division, Timken Roller Bearing Co.

Martin Fleischmann, metallurgical engineer with the Steel and Tube Division of Timken Roller Bearing Co., was educated in the Technical University of Munich, Germany. He has been employed by various steel companies in this country and has been in the service of the Timken company for the last eleven years

Variations in chromium content up to 5% have little effect on either creep or rupture strength. However, load-carrying ability is dependent upon chromium content due to the greater surface stability under corrosion and oxidizing conditions. Complete information on creep and rupture strength is not yet available for steels containing five to ten per cent chromium although present indications are that the effect is no different than for lower chromium content.

Silicon additions up to 1.5% lower creep strength at 1000 and 1100° F. but their influence is negligible at 1200 and 1300° F. Rupture strength is greatly benefited, mainly because surface and structural stability is affected.

Molybdenum is present in most of the high temperature steels because it improves strength and lessens temper embrittlement to which straight chromium steels are especially susceptible. The amount of this element in most steels has been limited to 0.50%. Additions up to 1.5% in 5% and 7% chromium steels at 1200° F. are increasingly effective in raising rupture strength but beyond that it is not nearly as effective. Further work is in progress with other steels and temperatures.

Among the materials now under test is a 5% chromium, 2% silicon, 3% molybdenum steel. At 1500° F. long time

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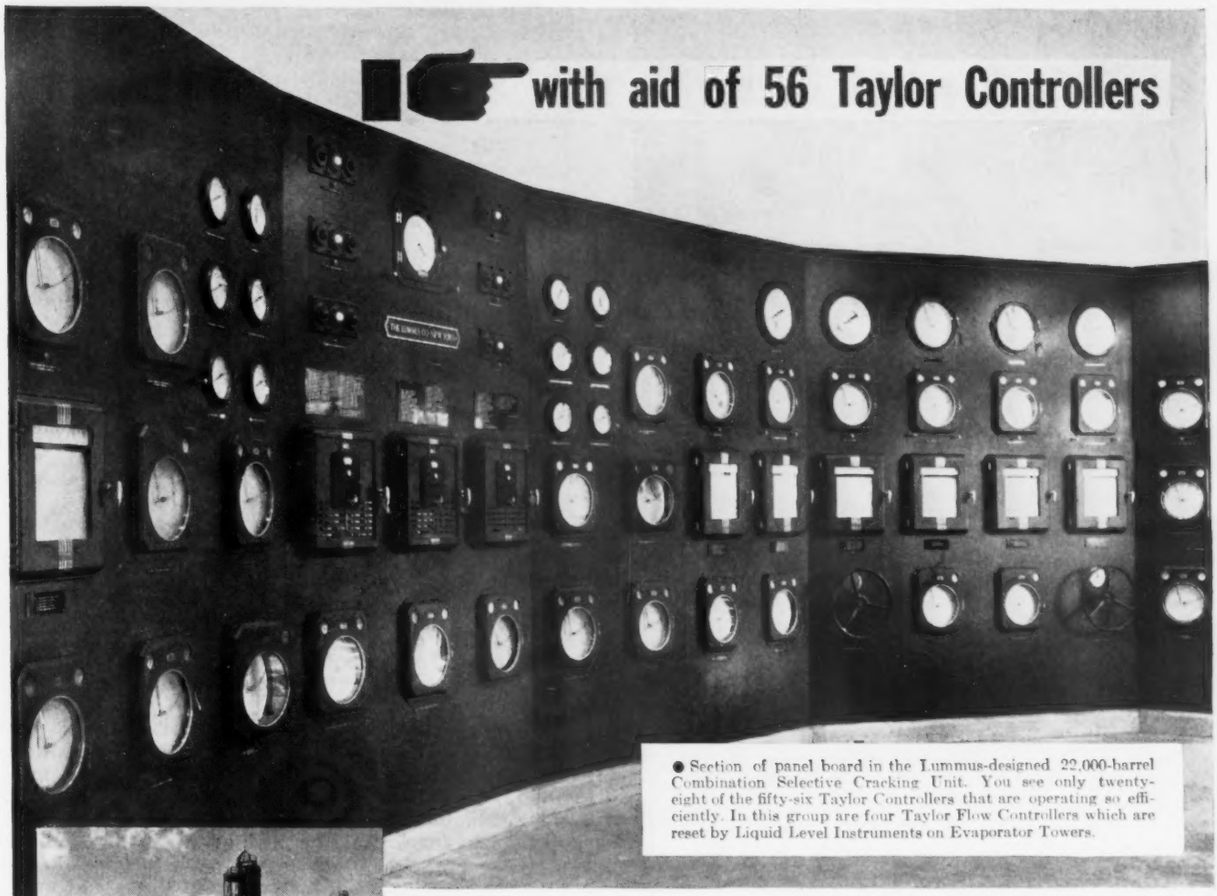

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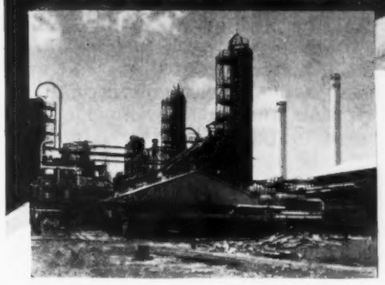

Precision control of temperature, pressure, flow and level provided by Taylor Systems in newest of five combination cracking units helps to produce products that meet all specifications.

DOWN in the Southwest last year a new 22,000-barrel combination cracking unit went into operation.

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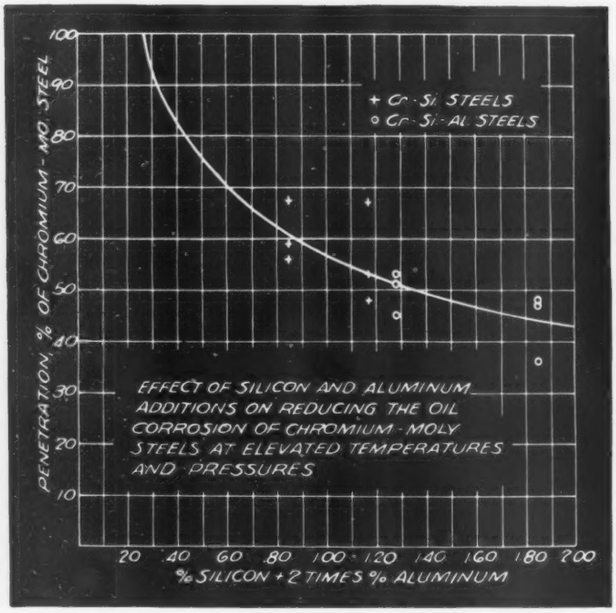

tests show it surpasses stainless 18-8 in rupture strength and is equal in oxidation resistance.

Vanadium, in combination with chromium, imparts resistance against hydrogen penetration at high temperature and pressure. It does little or nothing for rupture strength of two chrome silicon steels, tests show, although special heat-treatment might make an improvement.

Corrosion resistance of steels to hot petroleum products depends primarily upon the chromium content and the tendency at present in the selection of materials for severe corrosive conditions is toward chromium-molybdenum steels with over 6% chromium. The effectiveness of chromium in this respect is as much as doubled by silicon or silicon plus aluminum, as shown in the accompanying chart. The cheapness of these two materials contrasts with vanadium as an alloying material.

Chromium is also a strong preventative of scaling. A decided improvement results upon the addition of 4% chromium. Silicon and silicon plus aluminum aid in oxidation resistance to an even greater degree than against corrosion. In chromium bearing steels, silicon is seven times and aluminum four times as effective as chromium in imparting non-scaling properties in oxidizing atmospheres. A 5 Cr-Mo steel with 1.5% silicon may be considered as commercially non-scaling at 1500° F. in air. About 10% chromium alone is required at 1300° F.

The lack of structural stability is manifested by certain changes in the crystal structure of the steel. The most common change is spheroidization in which the carbide constituent changes from its plate-like form into spheroids. Critical change transformations, that is the passage of the ferrite from the alpha to the gamma condition, can only occur in service under severe overheating. Since chromium, as well as silicon and aluminum, raise the critical transformation range of steels, a safety factor is introduced against this change. Carbide precipitation in the grain boundaries is one of the objectionable characteristics of 18-8 stainless steel. It is commonly assumed that this precipitation lowers the chromium content in the vicinity of the grain boundaries and this may lead to intergranular oxidation and corrosion. Suitable addition of titanium or columbium acts as an inhibitor.

Retention of a high degree of ductility after prolonged cracking still service is of great importance in order that bulging of tubes will warn of impending failure. Overcoming poor impact resistance in connection with ductility is also important. To date molybdenum is the only element known which effectively performs this function. The stress-rupture test, as developed during our investigation of the Sicromo steels offers an ideal means for determining the influence of stress and time on hot ductility. Regular 5 Cr-Mo steel suffers an appreciable loss in ductility after only 1000 hours at 1200° F. With an added 0.5-1.0% silicon it retains its original ductility.

The loss of hot ductility can often be attributed to lack of sufficient surface stability. It is for this reason that it is believed advisable to have appreciable silicon present in all steels intended for high temperature applications.

Recent developments in the petroleum industry have created a demand for steels capable of resisting the attack of hydrogen under high pressure at elevated temperatures. Not only does the attack of hydrogen result in decarburization but under extreme conditions actual fissuring results which in turn causes the steel to become brittle. The elements which form the most stable carbides are effective in preventing this phenomenon. While chromium is not the most effective element, it offers a high degree of protection when used in excess of 3%.

With steels intended for use as tubes in oil cracking stills, it is, of course, essential that the composition and heat-treatment be so adjusted as to assure room temperature properties which will permit satisfactory fabrication and installation. Development work has been conducted recently in improving the method of rolling these tubes into headers.

The recent trend is to the use of upset and machined tube ends. This assures absolutely concentric tube ends free from decarburization and surface imperfections and allows additional stock to take care of the flow of material during rolling. It also permits an accurate control of the amount and uniformity of deformation during rolling. The inner surface remains smooth and free from all defects and the wall thickness is well maintained.

When an inside surface of a conventional rolled tube is severely cold-worked, flaking is caused frequently and considerable thinning of end section. This is especially objectionable since the most severe corrosion usually occurs on the tube ends. It is generally assumed that the preferential corrosion attack may be associated with deformed crystal structure.

Table 2
Rupture Strength of Alloy Steels at 1200° F. and 1300° F.

Steel Designation	S.T.T.S.	Stress in Lbs. per Sq. In. for Factors in Designated Time Period, Hours 10	100	1000	10,000	100,000
Testing Temperature 1200°						
C	24,000	12,250	8,700	6,200	4,400	3,150
D	29,900	14,250	10,200	7,400	5,400	3,950
E	29,250	14,500	10,200	7,400	5,300	3,700
F	34,250	17,000	11,900	8,200	.....	.....
G	28,000	14,000	10,200	7,800	.....	.....
H	34,500	16,000	11,500	8,200	5,900	4,300
4-6% Cr.-Mo.	25,800	12,000	9,500	7,200	4,700	3,300
Testing Temperature 1300° F.						
C	15,000	7,500	5,250	3,700	2,650	1,850
D	19,000	8,000	5,800	4,250	3,100	2,250
E	21,000	9,000	6,000	4,000	2,700	1,800
H	21,600	9,400	6,300	3,900	2,550	1,700
4-6% Cr.-Mo.	19,000	8,600	6,000	3,600	2,200	1,300

S.T.T.S.—Short-time tensile strength.
NOTE: These tests conducted under slightly oxidizing conditions. Under more severely oxidizing or corrosive conditions the higher silicon steels would show to even greater advantage.

Wyoming Asphalt Properties

Progress in the study of the asphaltic fraction of Wyoming black oils is reported by K. E. Stanfield of the Bureau of Mines in Report of Investigations 3435, issued in March. The report describes the apparatus and method used in reducing Oregon Basin (Wyo.) crude to a desired percentage of asphalt and gives the properties of the asphalts. From these data the properties of the 100-penetration asphalt were estimated. The temperature susceptibilities, or changes in consistency with changes in temperature, were calculated and compared with similar asphalts from other crudes.

Wyoming black oils are characterized by their high-asphalt, high-sulfur, and low-gasoline content. Their principal use, therefore, is for road oil and asphalt. This report is a continuation of work reported last year in R. I. 3423 and the year before in R. I. 3358.

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Polymer Gasoline Needs No New Gum Inhibitors

This article is a condensation of a paper presented before the Western Petroleum Refiners Association meeting in San Antonio, March 20-22

By W. B. Ross and L. M. Henderson*

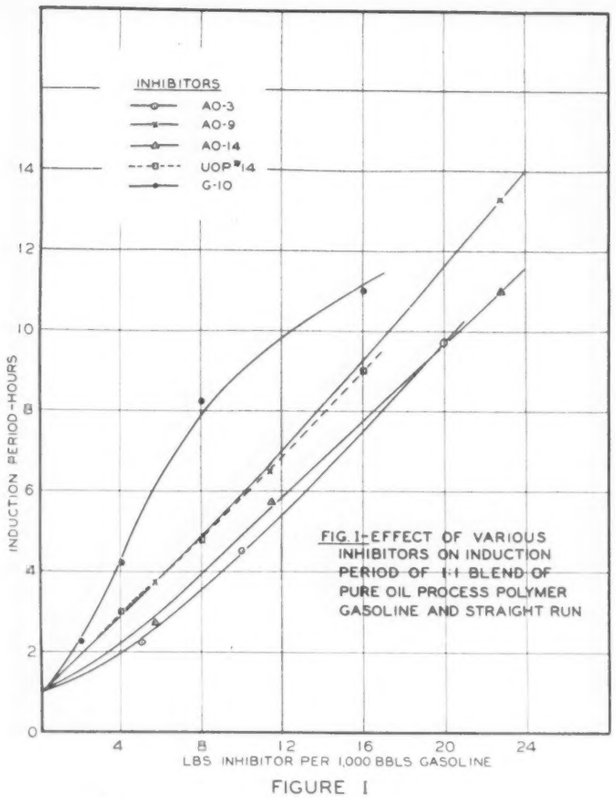

FIG. 1-EFFECT OF VARIOUS INHIBITORS ON INDUCTION PERIOD OF 1:1 BLEND OF PURE OIL PROCESS POLYMER GASOLINE AND STRAIGHT RUN

FIGURE 1

STABILIZATION of polymer gasoline toward gum formation is as easily and satisfactorily accomplished by the addition of commercial inhibitors as conventionally cracked gasoline, laboratory tests show. Experimental tests included both determination of "induction period" and copper dish gum (Fed. Spec. VV-L-791a, Method 330.1). Induction period was determined in a steel bomb of the Ethyl Gasoline Corp. type charged with oxygen at 70° F. to 100 pounds per square inch and heated at 212° F. until a definite drop in pressure occurred.

The induction periods of blends of polymerized gasoline and straight run gasoline containing various amounts of commercial antioxidants are shown in Fig. 1. The characteristics of the polymerized gasolines are presented in Table 1. Although the octane number of the polymer gasoline was 80, a 50-50 blend with 24 octane number straight-run gasoline tested 62.7 octane number. The polymerized gasoline of 80 octane number thus had an effective blending value of 101.

Further data to show the high blending octane number of the polymer gasoline are given in the following table:

Blend	% 400 E P Poly Gasoline	% A-5 Gasoline	L-3 Octane Number	Blending Octane Number
A	100	...	81.2	...
B	50	50	72.4	103
C	25	75	60.0	120
D	10	90	49.8	138
E	...	100	40.5	...

Test results corresponding to Fig. 1 but for an ordinary unleaded doctor-treated Mid-Continent gasoline showed that the susceptibility of a polymerized gasoline blend to inhibitors is of the same general order as that for ordinary cracked gasoline. This is shown in Table 2.

The effect of tetraethyl lead upon the values in Fig. 1 was almost within the experimental error of the determinations. The effects of two inhibitors on six samples of polymer gasolines from the UOP catalytic process shows susceptibilities of the same order as polymer gasoline from the Pure Oil thermal process.

*The Pure Oil Co.

Table 1—Tests on Polymer Gasolines

Sample	Gray Treated Polymer Distillate	50% Gray Poly. Dist. 50% Straight Run Naphtha	Polymer Gasoline—Catalytic Process UOP 1	UOP 2	UOP 3	UOP 4	UOP 5	UOP 6
API GR. @ 60° F.	56.1	58.3	68.8	66.3	69.6	70.0	63.4	67.0
IBP	90	106	89	106	85	88	93	91
10%	126	163	136	149	115	117	137	140
50%	179	226	207	214	207	205	242	216
90%	317	282	343	326	312	300	370	331
End Point	406	364	383	433	388	393	475	420
Reid Vapor Pressure	14.3	8.2	15.0	11.8	11.6	13.7	10.4	10.1
Octane Number	80.0	62.7	81.0	80.5	81.0	83.0	80.5	82.0

Table 2—Gum Stability Tests of Inhibited Gasolines With Various Concentrations of Commercial Antioxidants

Inhibitor Lbs. Inhibitor per 100 Bbls. (42 gal.)	AO-3 Induc. Period Bl*	AO-3 Induc. Period MC*	AO-3 Copper D. Gum Bl	AO-3 Copper D. Gum MC	AO-9 Induc. Period Bl	AO-9 Induc. Period MC	AO-9 Copper D. Gum Bl	AO-9 Copper D. Gum MC	AO-14 Induc. Period Bl	AO-14 Induc. Period MC	AO-14 Copper D. Gum Bl	AO-14 Copper D. Gum MC	UOP-4 Induc. Period Bl	UOP-4 Induc. Period MC	UOP-4 Copper D. Gum Bl	UOP-4 Copper D. Gum MC	G-10 (Solid) Induc. Period Bl	G-10 (Solid) Induc. Period MC	G-10 (Solid) Copper D. Gum Bl	G-10 (Solid) Copper D. Gum MC
2.0	...	...	...	...	...	...	...	...	...	...	...	...	...	3¾	13	42	2¼	3¼	22	32
4.0	...	...	...	...	...	...	...	...	...	...	...	...	3	4¼	13	13	4¼	3¾	21	18
5.0	2¼	4	17	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5.71	...	...	...	...	3¾	4½	11	12	2¾	4¼	9	17	...	...	...	...	...	...	...	...
8.0	...	...	...	...	...	...	...	...	...	...	...	...	4¾	6	11	13	8¼	5	18	16
10.0	4¼	5	12	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
11.42	...	...	...	...	6½	6½	10	15	5¾	5½	10	16	...	...	...	...	...	...	...	...
16	...	...	...	...	...	...	...	...	...	...	...	...	9	...	9	...	11	...	15	...
20.0	9¾	7½	8	19	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
22.84	...	...	...	...	13¼	9½	11	10	11	8¼	10	11	...	...	...	...	...	...	...	...
32.0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	...	...	...	...	...
40.0	18½	...	14	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
45.7	...	...	...	...	...	...	11	...	...	...	...	11	...	...	...	...	...	...	...	...

* Bl—Blend containing equal parts of Pure Oil polymerized gasoline and straight-run gasoline.
* MC—Ordinary unleaded doctor treated Mid-Continent gasoline (composed approximately of 40% straight run gasoline, 20% CHP gasoline, 25% Cross cracked gasoline, and 15% casinghead gasoline).
Induction period is in hours and copper dish gum is in milligrams per 100 milliliters.

Welding High Pressure Piping By New Acetylene Method

This article is a condensation of a paper presented at the annual convention of the International Acetylene Association in Houston, March 8-10

By Arthur N. Kugler*

IMPROVEMENT in weld quality, coupled with savings in time and materials, makes multilayer welding technique with oxy-acetylene attractive for welding high pressure piping. As the name implies, multilayer welding refers to the deposition of weld metal in layers, usually one for each one-quarter inch of thickness. Thus a half-inch wall, considered here as minimum for high pressure piping, requires two layers.

Multilayer welding differs somewhat from arc welding in that layers always bridge from one side of the vee to the other. In arc welding, except for the first few heads, the deposited metal does not usually span the vee. Further, the thickness of the layers of multilayer welds will be greater than on arc welds.

Field experience with multilayer oxy-acetylene welding indicates savings in time and materials. The economies in welding time are the result of welding on relatively thin layers permitting the operator to devote his attentions to the particular difficulties of that zone. The reduction in welding gases and rods is obtained through reduced size of puddle carried and the lessened depth of fusion. Overall cost reductions of 15 to 25 per cent are reported.

Of greater importance is the improvement in weld quality. The simplification of welding procedure enables average welding operators to make welds which fulfill the test requirements. Tensile strengths equal to that of pipe material are regularly obtained. Free bend ductilities of 25 to 50 per cent and occasionally higher are on record. Back bend tests invariably go 180 degrees without sign of failure. Flawless nick break specimens are the rule.

Of all the methods of pipe welding, the oldest is perhaps the so-called forehand or puddle welding method. In this the torch and rod are so disposed that the torch flame points ahead of the completed weld and the rod precedes the torch. To produce sound welds it is necessary to give the rod and torch opposite oscillating motions. While it is possible to produce welds meeting test requirements, it requires a high degree of skill.

The backhand technique, also known as carburizing flame welding, was developed about ten or twelve years ago. In it the torch flame points back at the completed weld and the rod is interposed between the torch and weld. In this the width of vee is reduced to 70-75 degrees. Welds of this type readily develop 100 per cent the strength of the pipe on reduced section tensile tests and show superiority over forehand welding in several tests. While true back-hand welding reduces many welding troubles to a minimum they are still present and tend to reduce welding speed and weld quality. To overcome these the multilayer welding was developed.

For high pressure carbon steel pipe welding in grades A and B it is recommended that Grade 10 welding rods be specified. These rods in the non-stress relieved condition must develop 60,000 psi (pounds per square inch) in tensile strength and 20 per cent elongation in two inches. For welding other steel alloys used for more severe conditions and higher pressures and temperatures, a welding rod of the same analysis should be used generally. These include carbon molybdenum, having the most welding experience, chrome molybdenum, nickel molybdenum, 18-8 stainless and other analyses.

Carbon molybdenum steel is in extensive use as high pressure pipe in carrying steam at 900-1400 psi and 900-1100 degrees Fahr. Most of this pipe installed to date has

*Mechanical engineer, Air Reduction Sales Co., New York.

been arc welded using a specially designed joint. In this joint the ends are upset, bevelled or grooved and bored internally to receive a liner. On some installations oxy-acetylene welding has been employed with the same type of joint using a thicker upset section to offset the difference in strength.

Due to the long time required to arc weld these joints several piping fabricators have felt that oxy-acetylene welding would expedite the operation and yield lower costs. Special welding rod has been developed and is now undergoing tests the results of which are most promising. The all weld metal tensile test specimens develop 65,000 to 80,000 psi. Physical properties of the base metal are readily duplicated.

In arc welding, electric preheating coils are placed around the prepared and tacked pipe ends and the temperature raised to 300-550 degrees Fahr. The preheat temperature is maintained during welding by thermocouple controls. Welding progresses with small heads deposited with ⅛ and 5/32-inch diameter electrodes. It is common practice to chip out about half of each head to insure absence of foreign inclusions. After a weld is completed it is stress relieved by heating with electric coils at 1100-1200 degrees Fahr. The rate of temperature rise is maintained at 250 degrees Fahr. per hour. The joint is held at stress relieving temperature for four hours per inch of thickness, after which it is cooled at the same definite rate mentioned before. Thus these welds take a long time, 18 to 20 hours for an 8-inch joint 1¼ inches thick, and require a large number of heads (55 to 65).

Oxy-acetylene welding of these same joints including the liner would progress without preheating other than that in the normal operation of the torch. If desired, preheating can be employed using either the electric method or an auxiliary torch. Its use will tend to speed up welding and reduce gas consumptions slightly. However, it should be remembered separate preheating is not essential for producing high quality welds. The final layer of weld metal should always be deposited above the level of the pipe wall surface to insure maximum heat treating benefits on the previously deposited layers. The stress relieving of carbon molybdenum steel is dictated by the steel properties rather than by the welding technique, hence the same general procedure will be employed for both methods.

The American Standards Association code requires that welded joints in carbon steel piping shall be stress relieved when the pipe wall thickness is ¾-inch or greater and the service temperature is over 250 degrees Fahr. Furnaces provide the most convenient and economical method of handling the large assemblies. In the field, electric coil units have found wide acceptance but are costly. Another field method is to employ small portable furnace, one for each size of pipe, fired with gas. Still another method employs oxy-acetylene torches equipped with multiple flame tips.

On a recent large installation of extra heavy pipe, the weld and adjacent pipe is heated to 1450 degrees Fahr. When the joint has reached this temperature, determined by a pyrometer, it is wrapped with asbestos blocks or paper, the ends plugged, and allowed to cool slowly. Sample welds subjected to this heat treatment showed excellent grain refinement throughout the weld area. In addition, weld ductility was materially increased without serious loss in tensile strength. This procedure has proven highly successful and economical.

Coal for Diesel Fuel?

Abrasive effect of coal dust, one of the chief factors restraining its use as diesel fuel, may soon be reduced to reasonable proportions by the discovery of metal combinations for engine parts on which wear will not be excessive, the British Fuel Research Board believes. This statement in its annual report followed tests on a number of combinations of metals.

The Catalyst— "Boss" or "Helper"

(*Continued from page R-121*)

a complete understanding is to be given, these theories appear to agree with our present knowledge of catalysis.

Ipatieff does divide catalytic reactions into three groups. The first includes those which are easily explainable from observed data by the formation of intermediate products. The second includes reactions in which intermediate product formation is doubtful, which he calls Eka-catalysis, that is, unknown-catalysis. The third group is that involving photo-catalysis, occurring in the presence of light or other energy, or "physical" catalysis*.

Some catalytic reactions which have been employed in refining petroleum may be definitely placed in the first group, technologists believe. For example in the McAfee process for cracking heavier hydrocarbons to motor fuel with aluminum chloride, an intermediate product is formed, which may break down again and again into a product having successively more carbon and less hydrogen, releasing organic radicals which form the lighter, lower-boiling gasoline products, until finally the catalyst is "exhausted", becoming a carbonaceous mass in which the aluminum chloride is incorporated. Just what the composition of this mass may be is not certain. In this instance efforts to regenerate the catalyst have not proved commercially successful, so far as we know.

Catalytic polymerization likewise belongs to Ipatieff's first group, as for example when sulfuric or phosphoric acids are used as catalysts. Both acids are being used for polymerization or its twin brother alkylation. Esters of the acids are known to be formed, which later decompose to combine the esterifying radical with another radical of similar or differing composition to form the final product. Halogen acids such as hydrochloric and hydrobromic are also used for these purposes, as well as salts of these acids such as ferric and aluminum chlorides and bromides.

Recent developments in catalytic cracking of heavy oils would appear to belong to the second group, where intermediate product formation between catalyst and hydrocarbon appears doubtful. Whether or not an intermediate product may be formed instantaneously which as quickly decomposes may be the fact, but it has not been demonstrated so far as we know. Most of the catalysts now being used in commercial and experimental work are made from bauxite, chiefly aluminum oxide with some silica, and the degree of chemical reactivity of these materials in the normal sense at the temperatures employed in catalytic cracking is open to question.

So far as has been determinable, no intermediate product is formed when catalyzing the decomposition of heavier hydrocarbons to produce gasoline according to the processes now used or under development. Cracking with our present catalysts may not be entirely analogous to that obtained with aluminum chloride it seems, omitting reference to some "synthetic" catalysts also being studied. However, some technologists point out that, as with aluminum chloride, large quantities of carbon are formed on the Al_2O_3 catalyst. This carbon must be burned away to regenerate the catalyst, which appears to be a process of removing the carbon covering so that hydrocarbon vapors and catalyst surface may again make contact.

The answer to the question if catalysis may be essentially thermal, may lie in Ipatieff's theory that a catalyst converts heat energy to chemical energy to make possible the completion of reactions otherwise difficult or impossible to complete. For the refiner, the explanation of the reaction is important only if it makes practicable better application of catalysis to commercial processes. Reducing refining costs and improving product quality are the two mainsprings of the refiner's mechanism and the important thing is to utilize catalysts to accomplish these two results.

*See "Catalytic Reactions, etc.," by V. N. Ipatieff, page 502 and following.

Physical Constants of Hydrocarbons

(By Gustav Egloff)

The first volume of "Physical Constants of Hydrocarbons" by Dr. Gustav Egloff of Universal Oil Products Co., is just off the press. It includes the data on paraffins, olefins, acetylenes and other aliphatic hydrocarbons, and is No. 78 of the American Chemical Society Monograph Series.

The volume contains tabulated data on melting and boiling points, densities, refractive indices, etc., molecular weights and structures, of the hydrocarbons in these series, arranged in systematic manner for ready reference. These data have been compiled from such publications as Beilstein's Handbuch der Oragnischen Chemie, Heilbron's Dictionary of Organic Compounds, Chemical Abstracts, British Chemical Abstracts, International Critical Tables, and other sources. The work was started 16 years ago, the author states.

The tabulation is divided into three main parts; Alkanes or paraffins; Alkenes or olefins, and Alkynes or acetylenes, following the system worked out by the Commission of the Reform of the Nomenclature of Organic Chemistry, the so-called Geneva System, the report on which was published in the *Journal of the American Chemical Society* in 1933, vol. 55, pages 3905-25.

Particularly useful to the average petroleum chemist in addition to the tabulated data is the discussion of this system of naming hydrocarbon compounds which is given in the introduction of this volume. In recent years the nomenclature of organic materials has become somewhat confused by the use of technical or trade terms. The dissemination of the methods used in this standard system will aid in more exact identification of compounds throughout the industry. The details of the system are presented briefly but fully enough for a good understanding of the method, and the information will be useful to the chemist, especially in view of the present increased interest in petroleum hydrocarbon chemistry.

This volume may be obtained from the Book Department, NATIONAL PETROLEUM NEWS, at a price of $9.

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(See also page 43)

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Activities OF EQUIPMENT MANUFACTURERS

BLASTING AGENT—A new blasting agent, Nitramon S, for seismic prospecting by the reflection method is announced by E. I. du Pont de Nemours & Co. It is much safer to handle than gelatin dynamites normally used, it is said.

* * *

FLOW RATIO CONTROL—The rate of flow of one fluid in definite ratio to the flow of a second fluid, automatically controlled, is accomplished by means of a new flow ratio controller recently developed by The Bristol Co., Waterbury, Conn. One of the features of these controllers is an arrangement which permits changing the ratio by simply turning a knob on the outside of the case. Thus, a 5:1 ratio between the flow of air and fuel gas, a 4:1 ratio between the flow of natural gas and artificial gas, a definite ratio between the two different kinds of gases in a furnace, or a definite ratio between the lean oil and wet gas entering an absorber, are some of the applications.

The controller is essentially two instruments, one a standard flow recorder and the other a standard flow recorder controller. Bristol's revised catalog No. 1051 describes these instruments.

* * *

POTENTIOMETER—A vibration-proof Celectray indicating potentiometer has been developed by C. J. Tagliabue Mfg. Co., Brooklyn. Its new damped photoelectric circuit does not respond to abnormal disturbance of the light-beam, it is said.

* * *

WRENCH—A simple torque-indicating wrench, making possible uniform tension of bolts in turbines, pipe flanges, couplings, pumps, etc., has been developed by Bonney Forge & Tool Works, Allentown, Pa. Bending of the spring steel shaft of the wrench carrying a foot-pound scale near the handle grip, moves the scale under a pointer which is attached to the socket end of the wrench. The wrench is 23 inches long and weighs 3 pounds.

* * *

PRESSURE RECORDER—Complete redesign of pressure recorders is announced by Crosby Steam Gage & Valve Co., 30 Church St., New York. The new instrument features inter-changeable tubes, micrometer calibration adjustments, one piece pens, and push-pull snap action chart hubs.

* * *

CASTABLE REFRACTORY—A new light-weight Firecrete for making special refractory shapes is announced by Johns-Manville, 22 East 40th St., New York. The new product is suitable for working temperatures up to 2200 degrees F. It is used also for lining furnace doors and for making small monolithic linings. Light-weight Firecrete is said to have four times the effectiveness of fire brick in retarding heat, while having only half its weight.

* * *

VALVES—The latest issue of Valve Values, house organ of The Edwards Valve & Mfg. Co., East Chicago, features a story on "Measuring Valve Parts." Equipment, methods and problems connected with the inspection of valve parts are discussed and illustrated.

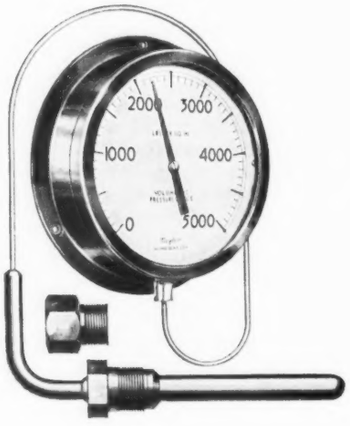
* * *

R. L. (BOB) EASLEY, Houston branch of Petroleum Rectifying Co., left recently via Pan American Airways for Venezuela on the first leg of a tour of inspection of Petreco Electromatic dehydration plants in South America.

PIPE UNION—A new Hammer Lug type of union has been designed especially for the oil industry by the Rockwood Sprinkler Co., 38 Harlow St., Worcester, Mass. It can be made up and broken apart by means of a hammer or other tool in the hands of operating men who are not pipe fitters. An alloy steel is used for greater strength and corrosion resistance.

* * *

PRESSURE GAUGE — New volumetric pressure gauges for mud pumps and cementing service, and high pressure reciprocating lines, are announced by Taylor Instrument Co., Rochester, N. Y. Employing a closed system similar to a temperature tube system, the pressure sensitive element is in direct



contact with the circulating fluid. There are no pressure taps to clog, no diaphragms to wear out. Mud cannot get into the instrument mechanism. A feature of the instrument is the damping out of pump pulsations. Changes in temperature along the connecting tubing are said to be counteracted by a patented Accuratus temperature-compensated tubing. Both indicating and recording instruments are available in the standard range of 0 to 5000 pounds.

* * *

VICE PRESIDENT DASSO of American Locomotive Co., Diesel Engine Division, has resigned, effective April 1. He will be retained in a consulting capacity, however, and will also continue in the position of U. S. representative of Sulzer Bros., Ltd., Winterthur, Switzerland.

* * *

WATER ANALYSIS—A new, enlarged fourth edition of the Water Analysis Manual has been published by W. H. & L. D. Betz, 235 W. Wyoming Av., Philadelphia. The handbook contains latest data on water analysis and tells how to obtain representative samples, following through with procedure, chemicals and apparatus required, and calculation of results for tests.

* * *

COMBUSTION CONTROL—The application of Metermax combustion control to boiler furnaces for all fuels is featured in a new 32-page catalog just issued by Leeds & Northrup Co., 4934 Stenton Ave., Philadelphia. Illustrations and schematic diagrams show how the control system is applied.

NPA—Symbol of Service

National Petroleum Assn., world's oldest oil trade association, rounds out 37 years of service to its members

ONLY one of the "founders" who launched the world's first petroleum trade organization—National Petroleum Assn.—will be present for the 36th semi-annual meeting to be held at Cleveland April 13 and 14.

He is Herbert G. Eaton, Superior Oil Works recording secretary of the association, who acted as secretary at that meeting at Pittsburgh's Hotel Lincoln on June 17, 1902, at which NPA was born.

Since that distant day, the NPA has held its "annual" and "semi-annual" meetings but these, after all, are only high spots — the associations' headquarters at Washington functions day in and day out, year after year, in the service of its members.

One prominent member has paid the following tribute to the NPA's headquarters staff:

"The staff considers that NPA is primarily a service organization, but, unlike many trade groups, it does not wait until it has a query for some specific information or a request to do something for the benefit of its members—it anticipates these queries and requests, and goes ahead and performs the service necessary, or gets the information likely to be requested long before the queries are put into words, or even formulated."

National Petroleum Ass'n., when it was formed back in 1902, started out with eight major departments—Manufacture, Trade and Commerce, Traffic and Transportation, Legislation and Litigation, Welfare and Insurance, Standards and Tests, Economics, Accounting and Statistics, and Membership and Relations. There are now ten, a taxation department having been added and the Welfare and Insurance department split up to form the Insurance and the Fire Prevention and Safety departments.

Each member of the Washington staff, headed by General Counsel Fayette B. Dow, is assigned to one or more of the various departments, in the field of which it is his or her job to keep in constant touch with all developments, to send out bulletins on occurrences and proposals of interest to the membership, and to otherwise give service.

In these days of numerous trade associations, it is a little hard to realize that there was a time when each member of a particular industry was dependent solely upon his own business organization for research (such as there was), for development of new methods, and for gathering such information as might be useful to him. Because anything he gathered, or developed, came the "hard way," he guarded it jealously, and thus each member of an industry lived and operated within his own little sphere, virtually without contact with his fellows in the same business.

It was with a view to ending this mutual distrust among the Western Pennsylvania and Ohio refiners that NPA was founded. The situation is described in a booklet covering the history of the first 25 years of NPA, prepared by Dow in 1927, as follows:

"Looking back from present atmospheres, from experiences that are commonplace today, it seems strange that it should have been difficult to induce men engaged in the same industry, facing similar difficulties, to join hands in an effort to solve problems that were common to them. One questions why it was not done before. One wonders why men who were willing to entrust their slender capital to the incomparable risks of the oil business of their day, were reluctant to trust each other . . . . . "

W. E. Wall of Conewango Refining Co. called the 1902 meeting at which NPA was founded, and, according to the minutes of the meeting, requested that all those present give their views on the situation "and suggest any plan that would result in securing good to the Independent Oil Refiners of Western Pennsylvania and Ohio."

A motion was then made by W. H. Fehsenfeld, seconded by H. A. Jamieson, Warren Refining Co., "that an association be formed to promote the Independent Oil Industry"—and NPA was born, a committee to draft a constitution and by-laws being appointed on the spot.

To quote again from Dow's history of the association, let's take a look at the situation in 1902 which brought these founders together:

"There is a common impression," says Dow, "that the petroleum industry was divided into two groups, clearly defined and sharply contrasted in all their characteristics. On the one side a group of fearless but peace-loving independents, few in number and weak in financial resources, perhaps, but upright in conduct, clean traders, harmonious in their relations, intolerant only of iniquity and wrong doing. On the other side the Octopus, merciless, greedy, controlling almost 90 per cent of the industry and still insatiable.

"There is just enough truth in that picture to make it almost wholly wrong. Within the industry the tradition of these two groups persists and there is much to justify it. But whatever were the sins of the Octopus measured by the standards of today, it had no exclusive claim to indefensible business methods. It had the unity of purpose assured by unified control.

Fayette B. Dow, Washington counsel for National Petroleum Ass'n. from 1918 to 1925 and general counsel since 1926, is a member of U. S. Supreme Court bar and graduate of Amherst College and Columbia University Law School. He was on the Columbia law faculty for five years while practicing in New York and from 1914 to 1918 was an attorney for the Interstate Commerce Commission. He has represented the oil industry before the U. S. Supreme Court, the ICC and other tribunals in a number of important cases, and has been spokesman for the industry before congressional committees, particularly on tax matters. An authority on traffic matters, Dow is chairman of the American Petroleum Institute's railroad transportation committee

"With the independents there was no unity, even of purpose. Men are much alike wherever you find them, and in both groups some men played fair, others did not. It was a fight for survival and the devil could take the hindmost. In that fight the independents fought everybody, including themselves. Catch them in a candid mood and they will tell you that they were not a group but several groups. Warren refiners were jealous of those at Oil City, Oil City was jealous of Warren. Titusville was jealous of both. They will tell you that they were their own worst enemies."

At the time NPA was organized the oil industry was going through a period of transition. Electricity was replacing kerosine as a source of light, and all the automobiles in the United States numbered less than may be found in a single small city today. It was hard to sell gasoline, even at a loss; cylinder stocks showed no profit; kerosine offered the only hope of profit and price cutting was destroying that hope. The situation of the independents was desperate, and they knew they were contributing to their own despair.

It is not hard to understand, then, that price was one of the first subjects to receive the attention of the newborn association. After much discussion, an attempt to raise the prices by recommendations of the executive committee was made, and continued futilely for two years, but in 1904, to quote from the minutes of those old meetings, "the president, (W. E. Wall) in explanation of his action in suspending all price recommendations for the present, said that too many complaints had reached him about some of the members not adhering strictly to the rules that had been adopted by the association for submitting quotations; and that an accumulation of these irregularities working to the disadvantage of members who strictly followed association rules had become intolerable to such members, who were unwilling to go on in the old way, and therefore, nothing remained but to suspend all prices, as he had done."

Commenting on this passage in the minutes, Dow says in his history: "On that day . . . . the matter of prices was removed forever from the activities of the Association."

But there were other activities in those early days besides the price attempt. Joint efforts at development of new refinery methods were being initiated, co-operation was being fostered in many lines—safety, manufacture, traffic, collection of statistics, and in general, pooling of ideas for the good of all.

These are the activities, now much broadened, which have continued down to the present time. It is hard to say which, if any, of the departments which now make up the association's activities are most important. Certainly they all have their place.

Among the outstanding ones today are the legislative and litigative department, the traffic department, the safety department, although the others continue to function with all the vigor of old.

"M. C. Mallon, attorney" on the letterhead of National Petroleum Ass'n. stands for Mary Casey Mallon, attorney, who has been with the NPA for 11 years, yet still receives letters addressed to "Mr. Mallon." Anyone who has attended an NPA convention in the past five years or so, knows how well Mrs. Mallon manages the details of these affairs. She is in charge of the NPA bulletin and is becoming a familiar figure around Capitol Hill from her appearances before congressional committees as the representative of NPA and other oil trade associations. Almost daily she is in contact with some government department on matters affecting the interests of NPA members. In private life, she is Mrs. Hugh D. Mallon

The Traffic department has been through a good many battles on behalf of the independent refiners and the industry generally. Secret rebates and discriminatory rates were among the first fights the association had, and they were handled by the Traffic department.

Although its present-day duties are probably not filled with the element of crusading that characterized those early years, its activities are none-the-less important.

The Traffic department's chief function now is in an advisory capacity with members and their traffic managers; in this work it aids in rate cases and similar matters before the Interstate Commerce Commission and other government agencies connected with transportation.

In the field of fire and accident prevention at refineries, the safety department has been unrelenting in its efforts to stimulate interest in safety measures. It encourages plant inspections by groups representing refineries in the same locality, with the double-barreled purpose of making available to the visited refineries the advice of the visitors, and of acquainting the visiting groups with advances made at the refineries at which they call.

From the outset, the NPA did much work on standards of products, along with development of methods. For many years the NPA color tests for lubricants were the only ones known. The standards group has continued to function in this capacity, co-operating with government and other agencies whenever new or revised specifications for any petroleum products were being drafted or discussed.

NPA officials and attaches point proudly to their system of gathering and disseminating of statistics as the most complete in the industry. Among the statistics they collect regularly are those on runs to stills in the Pennsylvania area, stocks of finished oils, and many others, as well as preparing special statistical reports from time to time.

Since the mushroom growth of the federal government with the coming of the New Deal, work of the legislative and taxation branches of the association in the national Capital has become more and more extensive. The association watches the course of all legislation affecting the industry when Congress is in session, and reports to members on this as well as on activities of the government departments and agencies with a bearing on the oil industry. This work is directly under the supervision of M. C. Mallon.

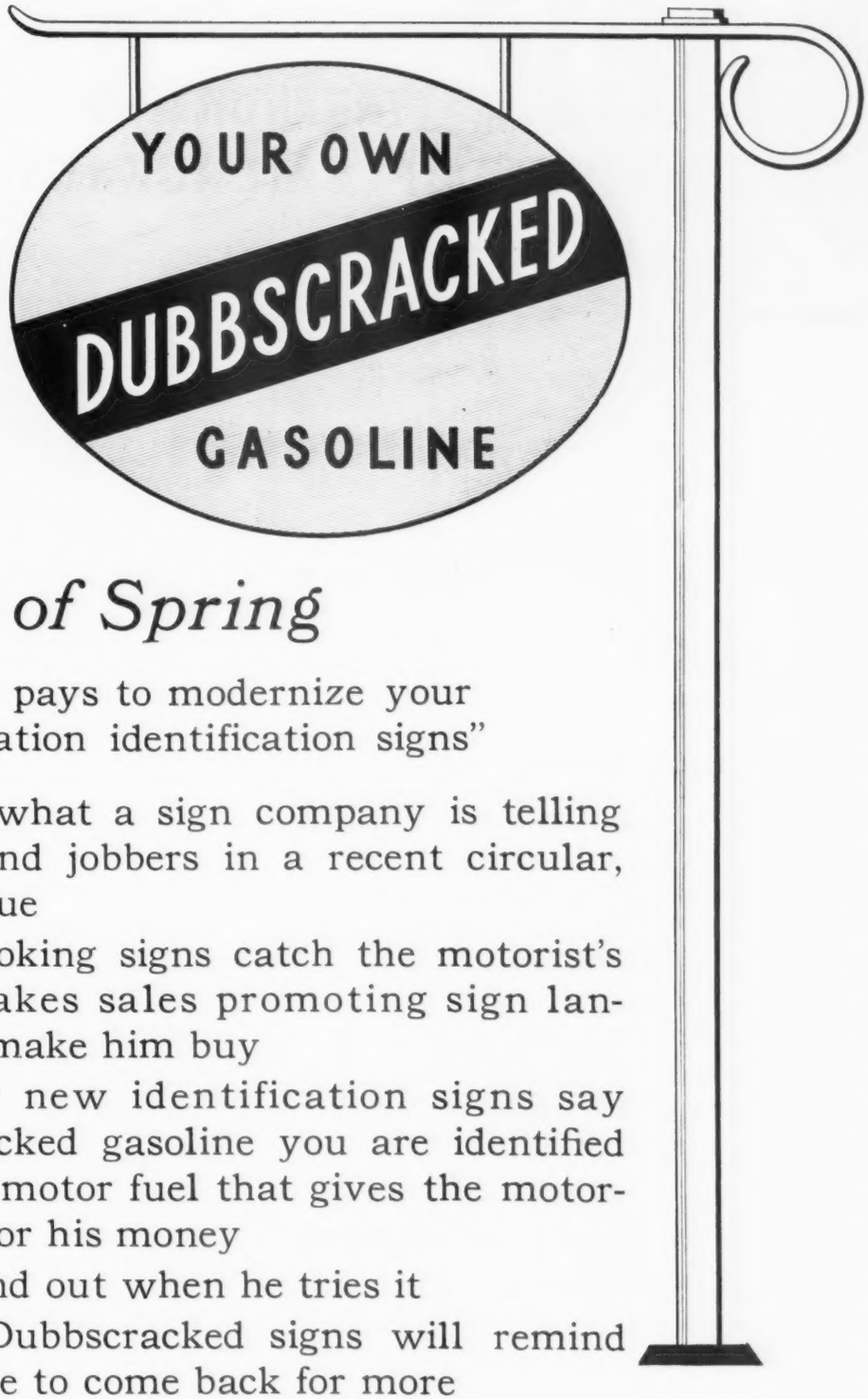
In the field of litigation, the association has initiated numerous cases, either on its own behalf or in the name of members, and several of these have gone to the U. S. Supreme Court—among them cases involving state anti-discrimination laws, inspection laws, etc.

The Washington staff is proud of its relations with government departments, and government officials whom NPA staff contacts have commented on the friendly relations which they maintain with the NPA.

Exemplary of the desire of the association to be "out in front" of the parade, anticipating problems and questions ahead of time, it is the fact that since 1926—and before—it has been studying pollution abatement methods, foreseeing present attempts at government regulation. As a result, many of its members' refineries are now equipped with separators and other facilities for pollution abatement which NPA has had designed and installed under the co-operative plan.

That, in brief — and it is very brief, when one looks back over developments of the 37 years since 1902—is the story of the National Petroleum Assn.

A great deal of water has flowed down even such a small stream as Oil Creek since 1902. The recriminations of yesteryear have been forgotten, and today the members of NPA who banded together to stave off the onsets of the "octopus" are listed in the same membership list with "major" oil companies, and the spirit of co-operation prevails.



Signs of Spring

"It pays to modernize your station identification signs"

That's what a sign company is telling refiners and jobbers in a recent circular, and it's true

Good-looking signs catch the motorist's eye It takes sales promoting sign language to make him buy

If your new identification signs say Dubbscracked gasoline you are identified with the motor fuel that gives the motorist more for his money

He'll find out when he tries it

Your Dubbscracked signs will remind him where to come back for more

Universal Oil Products Co
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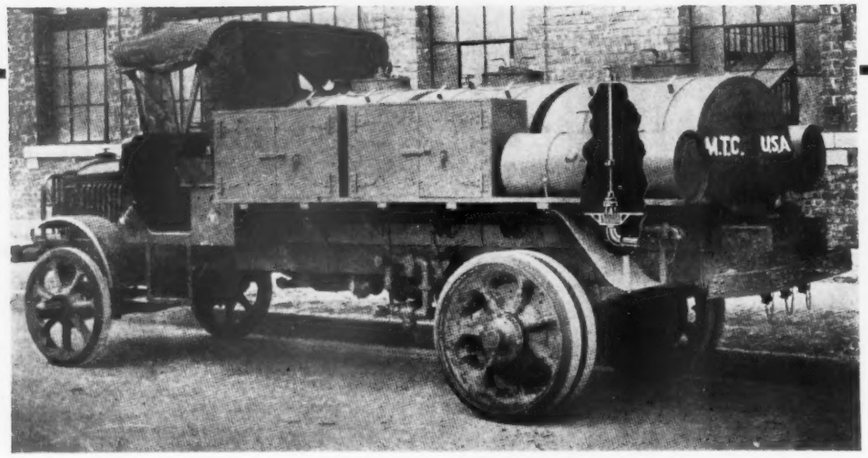
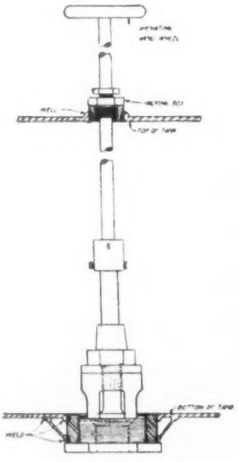
IN 1917 WHEATON PIONEERED THE DEVELOPMENT OF EMERGENCY VALVES



A cut-out view of the Wheaton Emergency Valve of 1917, installed on a United States Army Truck. This valve was the product of Wheaton pioneering in emergency valves.

WHEATON engineers played as important a part in pioneering the development of emergency valves as they did in truck tank faucets.

Over twenty-two years ago Wheaton was making emergency valves—and making them with such dependability, simplicity and ease of operation that they were recognized as the foremost valves of their day. In 1917 Wheaton Emergency Valves were adopted for use on truck tanks supplied to the United States Army.



EMERGENCY VALVE

From a blueprint of the first Wheaton Emergency Valve, designed over 22 years ago.

Today—over two decades after the first Wheaton Emergency Valve was installed in a truck tank—the *best* emergency valves still bear the name Wheaton. They reflect the years of Wheaton *improving* that followed Wheaton *pioneering*. They embody the greatest advances made in emergency valve performance, and are recognized as the *last word* in operating efficiency, simplicity and safety.

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TODAY WHEATON EMERGENCY VALVES LEAD IN EFFICIENCY AND SIMPLICITY

Patented cage can be made adaptable for any other truck tank emergency valve on the market.

Wheaton Type 200 Emergency Valve

Type 200 is a flanged elbow type emergency valve, with a new and improved type of stuffing box designed to prevent leaks. The stuffing box is composed of two sets of glands and packings, on which wear is automatically taken up by the tension of a spring between the two glands. Type 200 is operated by the Wheaton Type 510 Emergency Valve Operator to give 100% truck tank efficiency.

Wheaton Type 210 Emergency Valve

Type 210 is *simpler to maintain*—and easier to use—than any other type of emergency valve. Valve cage can be disengaged and entire valve cage and plunger assembly removed without need of steaming out the tank, or removing the entire valve. Streamlined valve cage prevents restriction in flow of liquid entering the valve. Type 211 is similar to Type 210, but it is for overhead operation.

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Five Hundred Lube Jobs Per Month

Here's how the operator of a downtown station, with no residential trade, uses his lifts to pull in customers

By A. M. Petty, N. P. N. News Editor

MORE than 500 lubrication jobs is the monthly average business of a service station, with no residential trade, on the edge of downtown Cleveland. For its trade, this station draws on both trucks and passenger cars.

Besides attracting this volume of lube jobs, this station also sells approximately 30,000 gallons of gasoline a month and large quantities of lube oil, tires, and accessories.

It is Sharp's Service Station, located at 21st St. and Payne Ave. and operated by Lewis ("Lew") Sharp. Records of his supplier and lessor, Socony-Vacuum Oil Co., confirm Sharp's large volume.

When interviewed by NATIONAL PETROLEUM NEWS, Sharp right off the bat, disclaimed any magic formula for success. He is modest, but pressed to sum up his policies, he said:

"Sell 'em, keep 'em sold—go out after more, sell them too, and hold 'em".

That may be his sales philosophy, but there are a dozen or so ingredients in his success, some of which have seldom been combined.

Sharp's station is located on the fringe of Cleveland's business district and ten blocks removed from the shopping area. There is no neighborhood residential trade. It is modern—but not ornate, with a two-lift lubritorium and a pit in back used for lubricating trucks and trailers.

The two lifts are kept busy day and night. With two men devoting virtually all of their time to the lubritorium, leaving the pump island trade to other attendants to handle, these two lifts average 200 lube jobs each per month.

The station is surrounded by a parking lot, yet definitely it is a service station—not a parking lot selling gasoline as a sideline. Sharp has been at this location for three years; for six years prior to that he had a station and parking lot half a block away (still operated, but not by Sharp).

The parking lot with about 100 cars on one side of the station and 8 or ten huge freight trucks parked on the other side, gave us the first clew as to Sharp's "secret" of success.

Parking charge is 15 cents a day, but most of the cars were parked free—they were "regular customers."

"Regular customers," Sharp explained, were those who gave his station their lubrication and oil change jobs and also bought from him their gasoline, tires and accessories. Such customers' cars were marked with a small, aluminum disc attached to the license plate.

Each time a car bearing a "regular customer" tag made a purchase—even though it was cash—the customer was so credited on the station's books. In this way, Sharp knows at all times whether or not a car-parker is "paying for his keep"—more about this record system later.

"Chiselers? Sure we have 'em—last month we had to chase off a couple of cars which were trying to sneak in and park after giving other stations their business."

The "regular customer" plan, however, wasn't the answer to Sharp's large number of lube jobs, as he pointed out that his lube jobs on private cars average about 400 per month, whereas he has only 110 "regular customer" tags out. Apparently, he is sincere about providing free parking, so he does not put out more tags than he has space for.

Next angle we asked about was the trucks. Sharp said his truck lube jobs average about 120 to 125 a month, with the heaviest business in the summer. We'll tell more about how he brings the truckers in later in this article. This truck business is cited at this point because it is unusual for a single station to enjoy a large volume of business from *both* trucks and cars.

Now, getting back to Sharp's record system—he has a card system covering considerably more than a thousand customers. Each card is checked every two weeks to see what work is apparently needed on the car covered by that particular card (on the basis of average mileage and previous experience with the same customer). This checking is done by the night manager.

When the card indicates that the car needs a chassis lubrication, oil change or other servicing, the night man makes out a card for that car, filling in the owner's address, mileage and what service is needed. It is the usual type of printed, lubrication notice card, except that it has no postage stamp attached (reason for this will be apparent in a minute).

Then, the night man makes up from these cards a list of cars needing service, with tag numbers and owner's name. This is posted prominently inside the station.

In the morning, the attendants watch for the cars listed. When one comes in, they greet the owner by name and point out the services needed. In this way, the attendants pick up enough business in the early morning

This picture of Sharp's Service Station is typical of a busy hour, showing one of the large highway freighters, which constitute a good part of his business. To the left, but not shown in the picture, he has a parking lot for "regular customers"

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The Mid-Continent refiner of lubricating oils is faced with the problem of dewaxing "slop cuts" in the manufacture of lubricating oils.

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hours to keep the two lifts busy at least until the going-to-work rush is over.

Meanwhile, Sharp has come down to the station and glanced through the cards. He checks the parking lot to see if any of the cars came in without being noticed.

Cards for cars which are not on the lot and whose owners do not work in the vicinity of the station, are then stamped and put into the mail.

Then, Sharp or one or two of the attendants take the cards remaining and start the rounds. They go to the owners at their places of business and sell them on a lube job or other items. Like many another successful station operator, Sharp has found that once the customer has been sold on one item, it is fairly easy to sell him others. And this is particularly true of a lube job or oil drain. With the car on the lift, the customer gets into the mood to "shoot the works" and get everything serviced that needs it. Of course, it's up to the salesman to sense this mood and capitalize on it.

Sharp has his servicing records set up on a basis of an oil drain every 300 miles for a new car, every thousand miles for older cars.

"That's the routine I follow for my own car," Sharp said, "so I recommend it to my customers. If one should come back with some crack about the car manufacturer saying longer mileage between drains is OK, I point out that it's *his* car now and that they ought not to take a chance on running it too long between oil changes."

INCIDENTALLY, Sharp seems to have a "photographic eye" for sizing up what servicing a car needs. One glance, and he seems to note automatically that the windshield wiper blade is missing, the tires worn, the plugs are bad or that some other items need attention. If the customer puts him off the first time, he remembers and brings it up the next time.

Yet, our observations of his selling tactics indicated that Sharp doesn't high-pressure the customer into buying something he doesn't actually need. Consequently, his sales persistence is not only accepted with good grace by the customer, but welcomed as evidence that the station is looking out for the car owner's interests, seeing to it that his car is kept in topnotch condition.

Sharp seems to have instilled this quality into his men (he has five helping him). But when asked how he teaches his men salesmanship, Sharp shrugged, "I tell them to keep on talking," meaning, we gathered, to keep persisting in selling the customer something his car really needs.

Just in case the customer has driven his car more miles than indicated by the card system, Sharp has his attendants check the mileage on the service-record sticker, inside the doorjamb, against the speedometer. They do this automatically, whether it be at the pump island or when the car is being parked. It's an unobtrusive practice which most customers never notice, unless the attendant points out that the speedometer indicates some servicing is needed.

Here is "Lew" Sharp standing in front of his station's lubritorium. He has built up such a large volume of lubrication and oil-drain business that his two lifts are kept busy day and night

This impresses the customer that the station is alert to his needs; it puts him in a "salable" mood.

Once on the lift, what does Sharp's Service sell them? Well, he figures that cars they get on the lift average about $4 gross, although some run as high as $15 or $20.

"In the summer," Sharp said, "we average about one oil drain for every chassis lube job; in the winter it's about one drain to every three lube jobs."

It is routine for Sharp to sell other lubrication items such as front-wheel bearing repacking (which is a sales opportunity he thinks many stations often overlook), seasonal transmission and differential drains and cleaning air filters. But he makes the most of the opportunity of thoroughly checking the car for other needs, so that he frequently sells spark plugs, radiator flushes, wiper blades, and—more frequently than many operators would believe possible—he sells batteries.

It should be emphasized again here that Sharp's selling does *not* involve high-pressure tactics to sell something that the car doesn't need. Each car is carefully studied for what attention is necessary and when servicing or replacements are needed, he tells the customer. If Sharp were guilty of "overselling", he wouldn't have so many customers who have patronized his station for years.

Noticing a machine for flushing crankcases in his lubritorium, we asked about his flush jobs. He said he put the machine in in February 1938 and that "it paid for itself within two months." The cost of such flushing machines runs between $300 and $400.

More and more customers today, he continued, are asking for a flushing job when they drive in for an oil drain. Motorists getting a flush job for the first time are interested in watching the machine work, and are impressed with the visual evidence of how much grit and dirt it flushes out of the crankcase, he said.

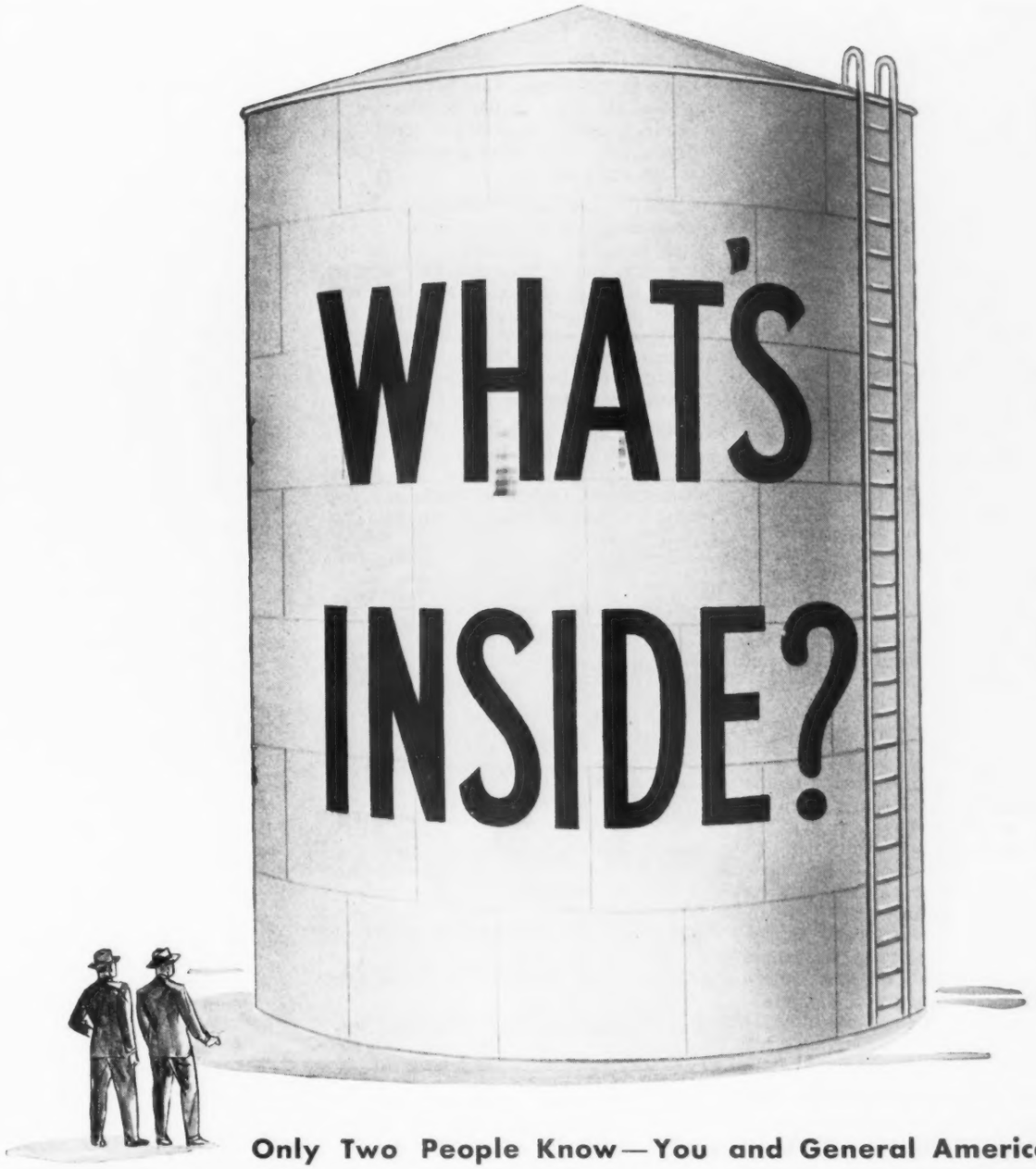
SHARP estimated that he is now selling about three flushing jobs to every four oil drains. His charge for flushing is $1 (it is $1.50 when the owner supplies the oil as some truckers do). Except for the labor involved in the five-minute flushing job, most of that $1 is profit. Cost of the flushing oil (which can be used about 100 times before it needs changing) figures out to a few cents per flush. Refilling the flushing machine takes about 100 gallons of flushing oil.

Sharp gets 75 cents for lubricating the chassis of the average passenger car, which is about average for lube jobs at Cleveland stations, with some charging more, some less. He pointed out that many stations, which charge $1 for a lube job, throw in free a cleaning of the air filter (besides, perhaps, vacuuming the inside of the car and other profitless "plus" services).

Sharp's customers are asked if they want the filter cleaned and, if they order it, the charge is 25 cents, plus the cost of the lube oil in the case of oil-type filters. He says his men will whiskbroom the floor with a 75-cent lube job, but will not vacuum-clean the car or other "plus" service like some of the $1 stations do.

In a nutshell, Sharp's customers get what they pay for—but not too much "free" service is included; and they pay for what they get, because Sharp has the reputation of maintaining his prices generally. His customers, mostly businessmen themselves, seem to think that is a fair policy.

After some time spent at Sharp's station, an observer senses that here is a different atmosphere from most stations; especially, is it different from stations in exclusively-residential districts. (Not that his housekeeping is below standard; far from it, his lubritorium is clean, pump island freshly painted, displays attractive,



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GENERAL AMERICAN TANK STORAGE TERMINALS

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Galena Park, Tex. (Port of Houston)
Corpus Christi, Texas

driveways clear of litter, and office neat).

First, it was noticed in Sharp's personality and, when we had had a glimpse of him in action with customers, it became apparent that the attitude of the whole station was but a reflection, or rather projection, of Sharp himself.

Sharp is a big man—"he blocks nearly half the doorway," as one customer remarked when the accompanying picture was snapped. He has a steady, unwavering eye; a strong jawline. He gives the impression of being a hard-boiled, two-fisted individual —and proud of it. But he has a genial grin. Dressed like his station attendants, he cocks his station cap jauntily on the side; his swaggering gait further contributes to the illusion of a sea captain. At a guess, he is in his middle 30s.

He has a good-humored, bantering manner with most of his customers, calling many by their first names. He rough-talks some, and they "eat it up." Many customers start off this good-natured joshing themselves, tossing a crack at Sharp as they climb out of their car. There are some customers, of course, that he calls "mister" and handles accordingly.

AS we sensed this atmosphere, we fished in our memories for a hauntingly-familiar situation—and finally it came to us like a flash. It was like Jack Dempsey's restaurant just off Broadway in New York. The customers had the same sort of attitude toward Sharp that the men in Dempsey's had toward the former heavyweight champion. Customers seemed happy to call him "Lew". But there was this difference between station operator and the restaurant proprietor—Sharp's attitude was genuine, his greetings were sincerely friendly.

Sharp's station attendants are friendly and respectful, but not effusive.

And then it began to dawn on us—here was a real, he-man station! We said so to Sharp.

"You bet—there's no lace on our panties."

Next question, the logical one, was, "You have very few women customers?"

"You are right—let's see," he replied, doing a quick mental calculation, "We have less than ten women among all our customers (more than a thousand). Of course, sometimes the wife of a customer drives in and leaves the car or picks it up." But, he could recall only six cars which come in regularly where women are the owners.

Sharp's parking lot shows that he has plenty of the "carriage trade." Nearly all of the cars parked were "good" cars, either expensive makes or late models in the low-price range; also, there were a number of brand-new models costing several thousand dollars. The jalopies could be counted on one hand.

All of these cars were potential customers of some dealer in the neighborhood where the owner lived, yet Sharp had been able to attract them to his station.

Sharp is a fixture in his business neighborhood, having operated a station there for nine years. Across the street is police headquarters, so that there is much coming and going there. Film exchanges nearby gave him opportunity to sell the salesmen weekly grease jobs and oil drains on their one day in town; office buildings are another source.

Asked how he drums up new business, Sharp was rather vague, "I just visit around — everyone knows me. Sometimes I'll spend a whole day visiting in one building". He said he never "pulled doorbells" or made a call "cold".

Easy access from a heavily-traveled thoroughfare is one secret of the large volume of business done by Sharp's Service Station in Cleveland. Virtually all of the time he has one or more cars waiting to get into the lubritorium, entrance to the left in this picture

Despite his highly personalized selling, Sharp also makes the most of sales helps from his supplier. When we interviewed him, he had just sent Socony-Vacuum his check for $68 in payment for mailing out spring promotional material to his customers.

Sharp and his men are also regular attendants at the supplier's sales meetings for dealers.

IN 1938, Sharp's station sold 4086 gallons of first grade oil and 128 gallons of second grade. He explained this 32-to-1 ratio in favor of quality oil by pointing out that he keeps only first grade oil at the pump island and that the attendants push it. And he does this because he sincerely believes that the better grade oil is worth the difference to the customer.

"With the newer cars using less oil nowadays, we sell very little oil at the island—except to the jalopies and we try to sell them a drain if they need it," he added. Besides this lube oil gallonage in 1938, Sharp also sold 1084 gallons of "other oils," mostly third grade oil to truckers in barrel lots.

Other lubricant figures for his station last year were 1882 pounds of chassis lubricants and 2900 pounds of gear oils.

With a better understanding of Sharp's personality and the type of station he was operating, it was easier to see how he had built up such a good truck business — although it is unusual for a station to have both car and truck business in volume.

Truck drivers are an adventuresome lot — voyageurs of the highways. Like clipper-ship captains on the seas a century ago, truckers hail each other as they pass on the road. They are clannish and cling to their kind; they believe themselves the successors to the old mule-skinners in hard-boiledness. When they find a station or eating place they like, it doesn't take long for them to pass the word down the line. And apparently such word has been passed about Sharp's station.

Sharp likes the truckers — his office wall is plastered with snapshots of truckers taken at his station and along the highway. In the back of his station, he has bunks and shower facilities for the driver who wants to catch up on sleep. Adjoining his station lot is a dining car.

His advice on how to handle truckers, was simply, "Don't call them mister."

ANOTHER attraction at Sharp's station for truckers is his diesel pump. He said the number of diesel trucks is increasing rapidly, yet stations selling diesel fuel are still few and far between. Because of this, Sharp added, some diesel trucks have had to put on fuel tanks of several hundred gallons capacity.

He told of one diesel truck driver who was so used to buying diesel fuel out of drums that he handed Sharp's attendant a strainer when he drove in to fill up. The attendant pointed out that Sharp's station had a diesel pump (similar to a modern gasoline pump) which strained the fuel in full view of the customer.

"Many stations drive the trucker away, but we find him a valuable customer," Sharp said, pointing out that trucks use the same oil as passenger cars and, for lubrication jobs, have about the same number of fittings. He gets $1.50 for lubricating the truck, and a similar amount for the trailer. Trucks are also good prospects for accessory sales, too, he has found.

Sharp uses the pit behind his station for greasing trucks and trailers, a doorway leads to the lubritorium so that the flushing machine and other equipment are accessible.

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Handling Fuel Oil Salesmen

Having Them Collect Delinquent Accounts Makes Them Careful of Selling Poor Credit Risks, is the Experience of One Company, Which Also Does Not Limit Its Men to Definite Territories in City

COLLECTIONS of the Great Northern Oil Co., Chicago fuel oil marketer, are handled by the company's sales staff, principally to develop the salesmen's perception of the credit possibilities of an account when soliciting the business. As a result of this policy, the company's credit losses are reported to be less than one-third of one per cent.

This collection policy is based on the theory that, if a salesman is good enough to sell an account in the first place, he is also good enough to talk the customer into paying the bill.

Any credit account that becomes annoying to the company, under this policy also becomes annoying to the salesman. All salesmen are paid a commission, so their time spent on collections is time taken from commission earning sales work.

The salesman invariably is the first to suggest dropping an account as a poor credit risk, the company has found under this policy. Also, the salesmen inform themselves on the credit rating of new business and are more likely to stay away from doubtful accounts in the first place.

Company officials believe the personal contact between the customer and the company is retained when the collections are made by salesmen, as against turning delinquent accounts over to a credit manager and that the customer is more apt to tell the true facts on a delinquent account to the salesman than to the credit manager.

All credit accounts are passed on by one of the company's two partners. Then if an account becomes 30-days delinquent the salesman handling the account is notified to start collection.

The Great Northern Oil Co. has built a half million dollar a year business in Chicago during the past five years selling domestic and industrial fuel oils and range oil, through close personal management of the business by the two partners.

During the company's first year the partners, E. R. Renier and Louis Dehmlow, were the entire sales force. As additional accounts were obtained a sales staff was built, man by man, and none of the salesmen taken on have left the company. The partners continue to operate as salesmen as well as managers, spending about two-thirds of their time personally handling accounts representing about half the company's sales volume.

The company has two divisions, one on the south side and one on Chicago's north side, each managed by a partner. Dehmlow, before the company was organized, was doing fuel oil sales work mainly with commercial accounts, so he handles the south side division which has more commercial than domestic business. Renier's previous fuel oil experience was mainly on domestic sales, so he handles the north side office which has more domestic than commercial accounts.

Each week the partners meet three to four times, frequently in the evenings, to discuss company business and policy. Both had engineering training in college and find this helps them greatly in this type of business.

A salesman for the Great Northern Oil Co. is not assigned a definite geographic territory, even though it is recognized this has an advantage in saving the salesman's time in going from one call to another. The company, however, wants to maintain throughout a close personal contact between customer and salesman, so that all accounts developed by a salesman belong to that man regardless of their location in the city.

The company has found that customer recommendation is one of the best methods of obtaining new business, and under their policy, a salesman is free to follow any leads he gets from established customers, rather than turn the prospect over to another salesman because territory boundaries interfere.

The salesmen do not make formal reports of the progress of their sales calls to the office. "We are trying to get away from a lot of red tape, which to a great extent is lost time," the

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partners said, "and if the salesmen are not conscientious enough to adhere to methods that they know from past experience have proven successful then there is not much good in their making out reports." The partners pointed out that they do not want to take the time to check sales reports, but they do, of course, have a daily contact with the salesmen working out of each division. The partners are at the office in the early morning and late afternoon, available to the salesmen to discuss their work and, while they are out on calls, the salesmen call in every two hours for messages.

The company employs as salesmen only men who have had no previous fuel oil experience, to avoid "untraining" a man developed under a different sales management policy, and also to avoid the possibilities of a man calling on accounts that he may have contacted previously for another line of burner oils. The training period of from 10 to 14 days is spent in making sales calls with one of the partners, and visiting various types of burner installations to learn the principles of combustion and the type of oil required.

The salesman's future then "depends on his aggressiveness as an individual," the partners said, "and if we allow a man to be free in running his own business he will be more creative than if we are leading him. If we lead him we are doing the directing when we could be doing other things."

The company's sales force operates throughout the year. From late spring through the summer they sign up contract customers for the coming heating season. Repeat calls are necessary to overcome the inertia of the customer in signing up in the off season, then the salesman cannot always find the customer at home, and vacations interfere with calls. During the winter the salesmen call on non-contract customers, seeking new business, and they make from seven to eight good-will calls on each contract customer to know that he is satisfied with the company's products and service.

The commission paid the salesman varies with the type of fuel oil sold and takes into effect the amount of effort required to make a sale and also the jobber's margin of profit in the oil sold. On industrial fuel oils, where the volume of a sale is relatively high and the margin relatively low, the commission rate is not as great as in domestic fuels, where the volume is lower and the margin higher. Commissions are paid each month and the salesman is given a monthly report on the quantity of oil delivered to each customer.

The company owns and operates its delivery equipment, so all the drivers are under company direction. During the summer months 40 per cent of the drivers are retained for delivery service. The company seeks employment for drivers who must be laid off with gasoline marketers who increase their driving staff during the summer, and takes them back in the fall, so it has kept its driving staff intact over the years.

Trucks are rotated in service during summer months, so there is always equipment available to fill summer orders, while at the same time all trucks are being prepared for the coming winter season. During the year drivers report any mechanical trouble to the shop foreman, who determines whether the equipment needs immediate attention, or whether the truck can continue in service until summer. Each truck is thoroughly inspected during the summer and is sent to the service garage of the truck manufacturer if any mechanical work is required.

The company started in business with used equipment, but in making replacements is concentrating its purchases on one line of trucks. Its trucks are metered, and deliveries are recorded on the meter ticket.

Truck painting is done with a special finish, at a passenger car body paint shop. The work costs about three times more than in a truck paint shop, company officials report, but they believe the extra cost is paid out in better truck appearance. The paint job is estimated to last four years. Trucks are relettered every other summer.

National Rfg. 1938 Loss Was $529,749

CLEVELAND, April 3.—Total gasoline sales of National Refining Co. in 1938 were 102,409,821 gallons, the company stated in connection with its annual earnings report. This was 2.7 per cent less than its sales in 1937, the loss being principally due to its voluntary withdrawal from certain subnormal price areas, where the realized price on gasoline was unsatisfactory, said Edgar G. Hill, who assumed the presidency Jan. 1, 1939, former president W. H. Lamprecht II becoming chairman.

The company's total sales of branded motor oils in 1938 were 4,347,330 gallons, it was said, 5.2 per cent less than 1937 sales. Sales in the latter part of 1938 and early 1939 showed an improvement, it was stated, gasoline sales in January, 1939, being 2.1 per cent more than in January, 1938, and sales of motor oils 16.4 per cent larger.

National Refining's income statement showed a loss for 1938 of $529,749.32. As a result of crediting surplus with $227,179, representing the increase in inventory values at the beginning of 1938 resulting from a change in the basis of carrying inventories to that of the lower of cost or market, the net reduction in surplus for the year was only $302,571.

On Jan. 27, 1939, the company completed the sale of 74,194 shares of common stock of Canadian Oil Cos., Ltd., for $1,780,656, which was $713,699 in excess of the value as carried on the company's books.

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Markets

Mid-Continent

TULSA, April 3.—Advances in gasoline quotations reported early last week by many Oklahoma refiners boosted prices for most U. S. Motor and 60-62, 400 e.p. grades 0.125 to 0.25 cent. Refiners in other Mid-Continent districts also reported higher gasoline quotations.

Three Oklahoma refiners said they still were buying gasoline in the open market to supplement their production. One refiner reported 50-car purchase of 67-69 octane gasoline. Some brokers said gasoline was closely held by refiners and that the refiners appeared reluctant to sell for other than immediate delivery.

Noticeable increase in inquiry for kerosine and tractor fuels was reported last week. Some refiners said they had received inquiries from other refiners.

Mid-Western

CHICAGO, April 3.—A number of Chicago tank car marketers and refiners reported 0.125 to 0.25-cent advances in their gasoline quotations the past week. Quotations reported for the U. S. Motor grades ranged upward from 3.75 cents for 62 octane and below, 3.875 cents for 63-66 octane, 4 cents for 67-69 octane, and 4.375 cents for 70-72 octane. Open spot sales totaling 25 cars of gasoline were reported during the week. Supplies of all grades, and particularly 62 octane and below and 67-69 octane, were closely held by refiners, resale agents said.

Quotations reported for kerosine continued to range from 3.5 to 4.375 cents.

Pennsylvania

CLEVELAND, April 3.—Advances of 0.5 cent were chalked up for all grades of neutral oil in western Pennsylvania last week when refiners generally reported higher quotations. U. S. Motor gasoline was up 0.25 cent in the lower field. Prices for other lubes and light products were reported unchanged.

Quotations reported for the 25 pour test neutrals ranged from 16 to 16.5 cents on 200 viscosity oil, and 14 to 15 cents on 150 viscosity. Open market trading was confined almost entirely to inter-refinery channels, reports indicated. Refiners said the demand for neutrals at this season indicated an even more pronounced trend toward lighter motor oils than in previous years.

Some large orders for reforming stock were said to have diminished the supply of straight run U. S. Motor gasoline considerably. Quotations reported for this product last week ranged from 4.5 to 5 cents, up 0.25 cent on the low of the price range.

N. P. N. Refinery Index

The Refinery Index shown below is the calculated average return from refining a barrel of 36 gravity Mid-Continent crude into its various principal products at the current price of crude oil. The index indicates the following margins in cents per barrel (42 gallons) between cost of crude and current selling price of products.

Date	Margin
April 3	44.8
Month ago	39.4
Year ago	42.7

Gulf

NEW YORK, April 3.—Bunker C fuel oil, in cargo lots, featured export and domestic markets at the Gulf the week ended April 1.

Several traders said that cargo lots of this oil for immediate movement were virtually unobtainable. Scarcity, sellers said, had resulted in their advancing prices from around 67 cents a barrel to 73 cents within a week.

A domestic cargo of approximately 70,000 barrels of 70-72 octane leaded gasoline was reported sold for prompt lifting at 4.875 cents, f.o.b. the Gulf.

Eastern

NEW YORK, April 3.—A Baltimore supplier reported reducing his tank car price for 73 octane gasoline to 5.5 cents in the week ended April 1. Other sellers in this area said they were holding this grade at 5.75 cents.

Some sellers at Boston and Providence reported they had reduced their gasoline prices 0.125 cent to 5.75 cents.

Elsewhere along the eastern seaboard wholesale gasoline prices were unchanged, according to reports.

Continued unconfirmed reports of low-priced offerings of high octane gasoline were encountered at New York harbor, but sellers said they were holding spot offerings of this grade at a low of 5.5 cents in barge lots.

N.P.N. Gasoline Index

	Dealer T.w. Cents per	Tank Car Gal.
April 3	9.35	5.48
Month ago	9.35	5.42
Year ago	10.23	5.96

Dealer index is an average of "undivided" dealer prices, ex-tax, in 50 cities.

Tank car index is a weighted average of 12 wholesale markets for regular-grade gasoline.

Distributors reported that gasoline consumption in March was ahead of the same month last year.

Michigan

ALMA, April 3.—Michigan refiners reported increased demand for straight run gasoline the past week in anticipation of spring farm needs. Supplies of this grade were appreciably lower, they said. Quotations for intrastate movement ranged from 4 to 4.5 cents, according to reports. Quotations for straight run gasoline moving outstate ranged upward from 3.75 cents, refiners said. Higher octane grades of gasoline also were in good demand and no changes were reported in quotations.

Jobber demand for kerosine also was good, refiners said. Most of them reported lower inventories of this product with quotations ranging from 5 to 5.2 cents.

California

LOS ANGELES, April 1.—West coast bulk markets were quiet the closing days of March. Atlantic foreign buyers continued to show interest in quotations on cargo lots of 65 octane—or better—gasoline, but no sales were reported.

Tenders on approximately 500,000 barrels of Japanese Navy fuel oil for delivery to the Far East over coming months, were said to have been awarded to one supplier at a price of slightly under 60 cents a barrel.

Japanese buyers were also understood ready to submit tenders on about 120,000 tons of California crude oil carrying not less than 15 per cent of high octane, aviation gasoline.

Fuel Oil

CHICAGO, April 3.—Despite warmer weather in the Middle West supplies of light fuels continued to be closely held, according to reports of resale agents here last week. Jobber demand for No. 1 p.w. distillate and other grades of light fuels suitable for farm use was good, they said. No changes in quotations for light fuel oils were reported.

Local demand for Nos. 5 and 6 industrial fuels was active and quotations were unchanged, reports indicated.

* * *

ALMA, April 3.—Jobber demand for light fuel oils in anticipation of spring farm needs has diminished the supply of these oils considerably Michigan refiners reported the past week. Quotations reported for No. 1 p.w. distillate continued to range from 4.5 to 4.75 cents. Some refiners said they were storing most of their heavy fuel production to meet road oil demand later in the Spring. Industrial demand for 100-700 vis. fuels was good and some refiners said they were sold up.

* * *

TULSA, April 3.—Little activity was

(*Continued on page* 39)

REFINERY TANK CAR MARKETS

All prices on this page are publisher's opinion of open market quotations or sales, for spot shipment (10 to 15 days) unless otherwise stated. Prices in cents per gallon, except heavy fuel oils in dollars per barrel of 42 gallons, wax and petrolatums in cents per pound in barrels, tank car lots, FOB refineries in districts designated, except where otherwise noted. Inter-refinery and export prices not included unless so stated in the respective markets. Federal, state or municipal taxes not included. Prices quoted apply on products made from legally produced crude. Unless otherwise noted, gasoline octane ratings are determined by C.F.R. Motor method, A.S.T.M. D-357-33T; and lubricating oil specifications determined according to A.S.T.M. methods, unless otherwise noted.

Gasoline

Prices Effective	April 3	March 27
OKLAHOMA		
U. S. Motor: (Octane L-3)		
62 oct. & below	3.875– 4.25	3.875– 4.25
63-66 oct.	4.125– 4.375	4.125– 4.375
67-69 oct.	4.125– 4.75	4.125– 4.75
70-72 oct.	4.625– 5.00	4.625– 5.00
60-62, 400 e.p.	(h)4.00	(h) 3.75 –3.875
WESTERN PENNA. REFINERY QUOTATIONS		
Bradford-Warren:		
Motor gasoline:		
U. S. Motor:		
Min. 65 oct.	6.00 – 6.75	6.00 – 6.75
Min. 70 oct.	(h)6.50	(h)6.50
"Q" gasoline	(h) 6.50–6.75	(g&h)6.50–6.75
Other districts:		
Motor gasoline:		
U. S. Motor (58-62° gravity):	4.50 – 5.00	4.25 – 5.00
"Q" gasoline	6.25 – 7.00	(g) 6.25 –7.00
CENTRAL MICHIGAN (a)		
Str.-Run Gasoline	(c) 4.00 – 4.50	(c) 4.00– 4.50
U. S. Motor: (Octane L-3)		
67-69 octane	(e)6.50	(e)6.50
70-72 octane	7.25	7.25 – 7.75

Prices Effective	April 3	March 27
CALIFORNIA (3c tax to be added if used in state)		
U. S. Motor:		
54-58 gravity, for in-state shipment	6.25 – 9.25	6.50 – 9.25
54-58 gravity, for out-side state shipment	6.25 – 9.00	6.25 – 9.00
58-61 gravity, 375-400 e.p., 65 oct. & above	7.75 – 9.75	7.75 – 9.75
N. TEX. (b)		
U. S. Motor: (Octan L-3)		
62 oct. & below	3.875– 4.25	3.875– 4.25
63-66 oct.	4.375– 4.50	4.375– 4.50
67-69 oct.	4.50 – 4.75	4.50 – 4.75
70-72 oct.	4.625– 5.125	4.625– 5.125
60-62, 400 e.p.	(h)3.875	(h)3.875
KANSAS (For Kansas destinations only)		
U. S. Motor: (Octane L-3)		
62 oct. & below	4.125– 5.00	4.125– 5.00
67-69 octane	(h) 4.375–5.50	(h) 4.375–5.50
70-72 octane	4.875– 5.875	4.875– 5.875
W. TEX. (b)		
U. S. Motor: (Octane L-3)		
62 oct. & below	(h) 4.00 –4.375	(h) 4.00 –4.375
63-66 oct.	(e)4.50	(e)4.375
67-69 oct.	(h) 4.50 –5.00	(h) 4.50 –5.00
70-72 oct.	(h) 5.00 –5.50	(h) 4.875–5.50

Prices Effective	April 3	March 27
CENTRAL WEST TEXAS (Prices to truck transports)		
U. S. Motor Gasoline: (Octane L-3)		
62 oct. & below	(h) 3.875–4.00	(e) 3.75 –4.00
63-66 octane	(e)4.625	(e)4.75
66-70 octane	(e)5.25	(e)5.25
E. TEX.		
U. S. Motor Gasoline, (Octane L-3)		
70-72 oct.	(h) 4.50 –4.75	(h)4.50 –4.75
60-62, 400 e.p.	(b) 4.25 –4.375	(b) 4.125–4.375
N. LA. (For shipment to La. & Ark.)		
U. S. Motor: (Octane L-3)		
62 oct. & below	(h) 4.125–4.375	(h) 4.125–4.375
63-66 oct.	(e) 4.375–4.625	(e) 4.375–4.625
67-69 oct.	(e) 4.625–4.875	(e) 4.625–4.875
70-72 oct.	(e) 4.875–5.375	(e) 4.875–5.375
ARKANSAS (F.o.b. Ark. plant of one refiner, for shipment to Ark. & La.)		
U. S. Motor: (Octane L-3)		
62 octane & below	4.125	4.00
67-69 oct.	4.50	4.50
OHIO (S. O. Ohio quotations for statewide delivery and subject to exceptions for local price disturbances)		
U. S. Motor	7.375	7.25
Above 65 oct.	7.625	7.50

(Continued on next page)

(a) Prices FOB Central Michigan refinery group basis, for shipment within Mich. Shipments may originate at plants outside Central group. (b) For shipment to Texas and New Mexico destinations; Group 3 prices quoted for northern shipment. (c) Excluding Detroit shipment. (e) One refiner quoting. (f) Two suppliers quoting. (g) To re-sellers holding licenses. (h) Two refiners quoting.

MID-WESTERN TANK CAR MARKET

Prices in this Mid-western Tank Car Market table are gathered from refiners and tank car marketers or brokers from their offices located in Chicago and the surrounding territory. While the prices are quoted on a Group 3 (Oklahoma) freight rate basis, this is in accordance with the custom of the oil industry which uses Group 3 as a price basis for the ease of comparing prices even when the material originates in another refining district. Generally when prices are quoted in this Chicago market, the origin of the material is not known at the time the quotation is given, oftentimes even with the quoting refiners who have refineries in more than one refining district. All other gasoline prices are given by and for the particular refining district where the material is made and from which it is shipped.

Gasoline

Prices Effective	April 3	March 27
U. S. Motor: (Octane L-3)		
62 oct. and below	3.75 – 4.125	3.625– 4.125
63-66 oct.	3.875– 4.00	3.75 – 4.00
67-69 oct.	4.00 – 4.50	3.875– 4.375
70-72 oct.	4.25 – 4.875	4.25 – 4.875

Kerosine

41-43 gravity, w.w.	3.50 – 4.125	3.50 – 4.125
42-44 gravity, w.w.	3.625– 4.375	3.625– 4.375

Fuel and Gas Oils

Prices Effective	April 3	March 27
No. 1 p.w.	3.375– 3.875	3.375– 3.875
No. 1 straw	3.375– 3.625	3.375– 3.625
No. 2 straw	3.25 – 3.50	3.25 – 3.50
No 3	3.00 – 3.25	3.00 – 3.25
No. 5	$0.575–$0.70	$0.575–$0.70

Prices Effective	April 3	March 27
No. 6	$0.35 –$0.45	$0.35 –$0.45
U. G. I. gas oil	2.625– 3.00	2.625– 3.00
Range oil	3.375– 4.00	3.375– 4.00

Naphtha and Solvent

Stoddard solvent	5.875	5.875
Cleaners' naphtha	6.375	6.375
V. M. & P. naphtha	6.375	6.375
Mineral spirits	5.375	5.375
Rubber solvent	6.375	6.375
Lacquer diluent	7.375	7.375

Daily range of gasoline prices as reported in PLATT'S OILGRAM (Week Ended March 31, 1939)

	March 27	March 28	March 29	March 30	March 31
U. S. Motor, (Octane Number determined according to L-3Method in Okla., Texas and Mid-Western Districts):					
62 octane and below:					
Oklahoma	3.875– 4.25	3.875– 4.25	3.875– 4.25	3.875– 4.25	3.875– 4.25
(a) North Texas	3.875– 4.25	3.875– 4.25	3.875– 4.25	3.875– 4.25	3.875– 4.25
West Texas	(d) 4.00 –4.375	(d) 4.00 –4.375	(d) 4.00 –4.375	(d) 4.00 –4.375	(d) 4.00 –4.375
Mid-Western (Group 3 basis)	3.625– 4.125	3.625– 4.125	3.625– 4.125	3.625– 4.125	3.75 – 4.125
63-66 octane:					
Oklahoma	4.125– 4.375	4.125– 4.375	4.125– 4.375	4.125– 4.375	4.125– 4.375
(a) North Texas	4.375– 4.50	4.375– 4.50	4.375– 4.50	4.375– 4.50	4.375– 4.50
West Texas	(b)4.375	(b)4.50	(b)4.50	(b)4.50	(b)4.50
Mid-Western (Group 3 basis)	3.75 – 4.00	3.75 – 4.00	3.75 – 4.00	3.75 – 4.00	3.875– 4.00
67-69 octane:					
Oklahoma	4.125– 4.75	4.125– 4.75	4.125– 4.75	4.125– 4.75	4.125– 4.75
(a) North Texas	4.50 – 4.75	4.50 – 4.75	4.50 – 4.75	4.50 – 4.75	4.50 – 4.75
West Texas	(d) 4.50 –5.00	(d) 4.50 –5.00	(d) 4.50 –5.00	(d) 4.50 –5.00	(d) 4.50 –5.00
Mid-Western (Group 3 basis)	3.875– 4.375	3.875– 4.375	3.875– 4.375	3.875– 4.375	4.00 – 4.50
70-72 octane:					
Oklahoma	4.625– 5.00	4.625– 5.00	4.625– 5.00	4.625– 5.00	4.625– 5.00
(a) North Texas	4.625– 5.125	4.625– 5.125	4.625– 5.125	4.625– 5.125	4.625– 5.125
West Texas	(d) 4.875–5.50	(d) 5.00 –5.50	(d) 5.00 –5.50	(d) 5.00 –5.50	(d) 5.00 –5.50
East Texas	(d) 4.50 –4.75	(d) 4.50 –4.75	(d) 4.50 –4.75	(d) 4.50 –4.75	(d) 4.50 –4.75
Mid-Western (Group 3 basis)	4.25 – 4.875	4.25 – 4.875	4.25 – 4.875	4.25 – 4.875	4.375– 4.875
Motor Gasoline, 60-64 octane:					
New York harbor	5.75 – 6.25	5.75 – 6.25	5.75 – 6.25	5.75 – 6.25	5.75 – 6.25
Philadelphia district	5.75 – 6.25	5.75 – 6.25	5.75 – 6.25	5.75 – 6.25	5.75 – 6.25
Baltimore district	5.50 – 6.00	5.50 – 6.00	5.50 – 6.00	5.50 – 6.00	5.50 – 6.00
Motor Gasoline, 65 octane & above:					
New York harbor	5.75 – 6.25	5.75 – 6.25	5.75 – 6.25	5.75 – 6.25	5.75 – 6.25
Philadelphia district	5.75 – 6.25	5.75 – 6.25	5.75 – 6.25	5.75 – 6.25	5.75 – 6.25
Baltimore district	5.50 – 6.00	5.50 – 6.00	5.50 – 6.00	5.50 – 6.00	5.50 – 6.00
U. S. Motor, 58-62°:					
Other districts (Western Penna.)	4.25 – 5.00	4.25 – 5.00	4.25 – 5.00	4.50 – 5.00	4.50 – 5.00
Motor Gasoline, Min. 65 octane:					
Bradford-Warren (Western Penna.)	6.00 – 6.75	6.00 – 6.75	6.00 – 6.75	6.00 – 6.75	6.00 – 6.75
Motor Gasoline, Min. 70 octane:					
Bradford-Warren (Western Penna.)	(d)6.50	(d)6.50	(d)6.50	(d)6.50	(d)6.50
"Q" Gasoline:					
Bradford-Warren (Western Penna.)	(c&d)6.50–6.75	(c&d)6.50–6.75	(c&d)6.50–6.75	(c&d)6.50–6.75	(c&d)6.50–6.75
Other Districts (Western Penna.)	(c) 6.25– 7.00	(c) 6.25– 7.00	(c) 6.25– 7.00	(c) 6.25– 7.00	(c) 6.25– 7.00

(a) For shipment to Texas and New Mexico destinations: Group 3 prices are quoted on northern shipment. (b) One refiner quoting. (c) To resellers holding licenses. (d) Two refiners quoting.

REFINERY TANK CAR MARKETS

All prices on this page are publisher's opinion of open market quotations or sales, for spot shipment (10 to 15 days). Prices in cents per gallon except heavy fuel oils in dollars per barrel of 42 gallons, tank car lots, FOB refineries in districts designated, except where otherwise noted. Inter-refinery and export prices not included, unless so stated in the respective markets. Federal, state or municipal taxes not included. Prices quoted apply on products made from legally produced crude. Unless otherwise noted, gasoline octane ratings are determined by C.F.R. Motor method, A.S.T.M. D-357-33T; and lubricating oil specifications determined according to A.S.T.M. methods, unless otherwise noted.

Natural Gasoline

(Prices to blenders on freight basis shown below. Shipments may originate in any Mid-Continent manufacturing district.)

Prices Effective	April 3	March 27
FOB GROUP 3		
Grade 26-70	(m) 2.50	2.50 – 2.625
FOB BRECKENRIDGE		
Grade 26-70	(l)2.375	2.375
CALIFORNIA (F.o.b. plants in Los Angeles basin)		
75-85, 350-375 e.p. for blending	6.25 – 6.75	6.50 – 6.75

Kerosine

WESTERN PENNA. REFINERY QUOTATIONS

Bradford-Warren:		
45 gravity w.w.	5.00	5.00
46 gravity w.w.	(e) 5.375–5.50	(e) 5.375–5.50
Other districts:		
45 gravity w.w.	5.00 – 5.25	5.00 – 5.25
46 gravity w.w.	(h)5.125	(h)5.125
47 gravity w.w.	5.25	5.25
CENTRAL MICHIGAN (a)		
47-49 gravity w.w.	5.00 – 5.20	5.00 – 5.20
OKLAHOMA		
41-43 gravity w.w.	3.875– 4.25	3.875– 4.25
42-44 gravity w.w.	4.00 – 4.625	4.00 – 4.625
KANSAS (For Kansas destinations only)		
41-43 gravity w.w.	(e)4.25	(e)4.25
42-44 gravity w.w.	4.375– 4.50	.375– 4.50
N. TEX. (b)		
41-43 gravity w.w.	4.25 – 4.50	4.25 – 4.50
N. LA. (For shipment to La. and Ark.)		
41-43 gravity w.w.	(h) 4.00 –4.125	(h) 4.00 –4.125
ARK. (F.o.b. Ark. plant of one refiner for shipment to Ark. and La.)		
41-43 gravity w.w.	4.25	4.50
CALIFORNIA		
40-43 gravity w.w.	5.00 – 7.00	5.00 – 7.00

Gas *and* Fuel Oils

WESTERN PENNA. REFINERY QUOTATIONS

Bradford-Warren:		
36-40 gravity	(e)4.625	(e)4.625
Other districts: (Excluding Pittsburgh District Prices)		
36-40 gravity	4.25 – 4.375	4.25 – 4.375
CENTRAL MICHIGAN (a)		
P.W. Distillate	4.50 – 4.75	4.50 – 4.75
No. 3 gas oil; Str.	4.00 – 4.50	4.00 – 4.50
U.G.I. gas oil	3.75 – 4.00	3.75 – 4.00
Fuel Oils (Vis. at 100):		
500-700 Vis.	2.00 – 2.25	2.00 – 2.25
300-500 Vis.	2.25 – 2.50	2.25 – 2.50
100-300 Vis.	2.375– 2.875	2.375– 2.875
OKLAHOMA		
No. 1 prime white	3.50 – 4.00	3.50 – 4.00
No. 1 straw	(h) 3.375–3.625	(h) 3.375–3.625
No. 2 straw	3.25 – 3.625	3.25 – 3.625
No. 2 dark	(h) 3.125–3.25	(h)3.125–3.25
U.G.I. gas oil	(h) 3.25 –3.375	(h)3.25 –3.375
28-30 gravity fuel oil	(e)3.25	(e)3.25
28-30 gravity zero fuel	2.75 – 3.25	2.75 – 3.25
24-26 gravity fuel	(e) $0.85–$0.90	(e) $0.85–$0.90
14-16 gravity fuel	(e)$0.70	(e)$0.70
No. 6 fuel	(h) $0.35–$0.45	(h) $0.35–$0.45
Range oil	(h) 3.875–4.00	(h) 3.875–4.00
KANSAS (For Kans. destinations only).		
No. 1 p.w. fuel oil	3.75 – 4.00	3.75 – 4.00
10-14 gravity fuel oil	$0.45 –$0.80	$0.45 –$0.80
N. TEX. (h)		
No. 1 Prime white	(e)4.00	(e)4.00
N. LA. (For shipment to La. and Ark.)		
20-24 gravity fuel	(e) $1.00–$1.05	(e)$1.00–$1.05
16-20 gravity fuel	(e) $0.80–$0.85	(e) $0.80–$0.85
10-14 gravity fuel	(e) $0.70–$0.75	(e) $0.70–$0.75
ARK. (F.o.b. Ark. plant of one refiner, for shipment to Ark. and La.)		
No. 2 fuel	3.625	3.625
28-30 gravity gas oil, zero	3.125	3.125
Tractor Fuel	(j)4.25	(j)4.25

Prices Effective	April 3	March 27
CALIFORNIA		
San Joaquin Valley:		
Heavy fuel	$0.50 –$0.75	$0.50 –$0.75
Light fuel	$0.70 –$0.85	$0.70 –$0.85
Diesel fuel (per gal.)	3.00 – 4.00	3.00 – 4.00
Stove dist. (per gal.)	3.25 – 5.00	3.25 – 5.00
Los Angeles:		
Heavy fuel	$0.43 –$0.90	$0.43 –$0.90
Light fuel	$0.60 –$1.00	$0.60 –$1.00
Diesel fuel (per gal.)	2.375– 4.00	2.50 – 4.00
Stove dist. (per gal.)	2.75 – 5.00	2.75 – 5.00
San Francisco:		
Heavy fuel	$0.95	$0.95
Light fuel	$1.05	$1.05
Diesel fuel (per gal.)	4.50	4.50
Stove dist. (per gal.)	5.50	5.50

Note: All above heavy fuels meet Pacific specification 400; light fuel, spec. 300; Diesel fuels, spec. 200; and stove distillate, spec. 100.

Neutral Oils

WESTERN PENNA. REFINERY QUOTATIONS

Viscous Neutrals No. 3 col. (Viscosity at 70° F.)

200 Vis. (180 at 100°) 420-425 fl.

0 p.t.	(h)19.00	18.50 –19.00
10 p.t.	(h)18.00	17.50 –18.00
15 p.t.	(h)17.50	17.00 –17.50
25 p.t.	16.00 –16.50	15.50 –16.50

150 Vis. (143 at 100) 400-405 fl.

0 p.t.	(h)18.00	(h) 17.50–18.00
10 p.t.	(h)17.00	(h) 16.50–17.00
15 p.t.	(h)16.00	(h) 15.50–16.00
25 p.t.	14.00 –15.00	13.50 –15.00

SOUTH TEXAS

Vis. Color		
Pale Oils: (*Vis. at 100°F.*)		
100 No. 1½-2½	4.50 – 5.00	4.50 – 5.00
200 No. 2-3	6.00 – 6.25	6.00 – 6.25
300 No. 2-3	6.50 – 6.75	6.50 – 6.75
500 No. 2½-3½	7.50 – 7.75	7.50 – 7.75
750 No. 3-4	8.00 – 8.25	8.00 – 8.25
1200 No. 3-4	8.375– 8.75	8.375– 8.75
2000 No. 4	8.50 – 9.25	8.50 – 9.25
Red Oils:		
200 No. 5-6	6.00 – 6.25	6.00 – 6.25
300 No. 5-6	6.50 – 6.75	6.50 – 6.75
500 No. 5-6	7.50 – 7.75	7.50 – 7.75
750 No. 5-6	8.00 – 8.25	8.00 – 8.25
1200 No. 5-6	8.375– 8.75	8.375– 8.75
2000 No. 5-6	8.50 – 9.25	8.50 – 9.25

Note: Red oil prices cover oils with green cast; blue cast red oils are slightly lower in some cases.

MID-CONTINENT (Vis. at 100° F.; F.o.b. Tulsa basis).

Pale Oils: (0 to 10 P.P.) Vis. Color		
60-85—No. 2	5.50	5.50
86-110—No. 2	6.00	6.00
150—No. 3	9.00	9.00
180—No. 3	9.50 –10.00	9.50 –10.00
200—No. 3	10.00 –10.50	10.00 –10.50
250—No. 3	11.00 –11.50	11.00 –11.50
280—No. 3	12.50	12.50
300—No. 3	13.00	13.00
Red Oils:		
180—No. 5	(e)9.00	(e)9.00
200—No. 5	9.00 –10.00	9.00 –10.00
280—No. 5	11.50 –11.75	11.50 –11.75
300—No. 5	(h)12.00	(h)12.00

Note: The following oils, of 15 to 25 p.p., are generally quoted these amounts under 0-10 p.p.; viscous oils, 0.5c; non-viscous, 0.25c. Viscous oils (150-300 vis.), No. 4 color, generally are quoted 0.5c above No. 5 color oils.

CHICAGO (Vis. at 100° F.)

Pale Oils 0 to 10 p.p. Vis. Color		
60-85—No. 2	7.25	7.25
86-110—No. 2	7.75	7.75
150—No. 3	9.00	9.00
180—No. 3	10.00	10.00
200—No. 3	10.50	10.50
250—No. 3	11.50	11.50

Prices Effective	April 3	March 27
CHICAGO (Continued)		
Red Oils:		
180—No. 5	9.00	9.00
200—No. 5	9.50	9.50
250—No. 5	10.50	10.50
280—No. 5	11.50	11.50
300—No. 5	11.75	11.75

Note: Viscous oils, 15 to 30 p.p. are quoted 0.5c lower; 60-85 and 86-110 No. 2 non-viscous oils, 15 to 30 p.p., 0.25c lower. To obtain delivered prices in Chicago, add 0.25c per gal.

Cylinder Stocks

MID-CONTINENT (F.o.b. Tulsa basis)

Bright Stocks:		
190-200 Vis. at 210° D.	(e)19.00	(e)19.00
150-160 Vis. at 210°D:		
0 to 10 p.p.	14.25 –16.00	14.25 –16.00
10 to 25 p.p.	13.50 –15.00	13.50 –15.00
25 to 40 p.p.	(h)13.25–13.50	(h) 13.25–13.50
150-160 vis. at 210° E.	12.50 –14.50	12.50 –14.50
120 Vis. at 210° D		
0 to 10 p.p.	(h) 13.75–14.50	(h) 13.75–14.50
25 to 40 p.p.	(e)12.75	(e)12.75
600 S.R. Dark Green	(e)5.50	(e)5.50
600 S.R. Olive Green	(h) 7.00 –7.50	(h) 7.00 –7.50
631 S.R.	(e)12.50	(e)12.50
Black Oil	(h) 3.50 –4.00	(h) 3.50 –4.00

CHICAGO (Viscosity at 210°)

Unfiltered Steam Refined:		
140	9.00	9.00
160	10.00	10.00
200	11.00	11.00
Bright stocks, 160 vis. at 210. No. 8 color:		
0 to 10 p.p.	15.75	15.75
15 to 25 p.p.	14.75	14.75
30 to 40 p.p.	14.25	14.25
E filtered Cyl. Stock	13.50	13.50

Note: To obtain prices delivered in Chicago, add 0.25c per gal.

WESTERN PENNA. REFINERY QUOTATIONS

600 S.R. filterable	8.00 –10.00	8.00 –10.00
650 S.R.	10.00 –11.50	10.00 –11.50
600 fl.	10.50 –12.00	10.50 –12.00
630 fl.	13.00 –14.00	13.00 –14.00
Bright stock, 145-155 vis. at 210°, 540-550 flash, No. 8 color:		
10 p.t.	18.00 –19.00	18.00 –19.00
15 p.t.	17.00 –18.00	17.00 –18.00
25 p.t.	15.00 –16.00	15.00 –16.00

Petrolatums

WESTERN PENNA. (In bbls., carloads; in tank cars, 0.5c per lb. less. One refiner reports he equalizes freight with nearest refinery to destination)

Snow White	5.875– 6.125	5.875– 6.125
Lily White	4.875– 5.125	4.875– 5.125
Cream White	3.875– 4.125	3.875– 4.125
Light Amber	2.50	2.50
Amber	2.25	2.25
Red	(e)2.125	(e)2.125

Wax

WESTERN PENNA. REFINERY QUOTATIONS

In bbls., carloads, New York.

122-124 A.m.p., w.c. scale	(h) 2.65 –2.75	(h) 2.65 –2.75
124-126 A.m.p., w.c. scale	2.70	2.70

OKLAHOMA (In bbls. or burlap bags, carloads)

124-126 A.m.p., w.c. scale	(h) 2.60 –2.70	(h) 2.60– 2.70

CHICAGO (In bags, carload lots. Melting points are E.M.P. (A.S.T.M.) methods; add 3° F. to convert into A.m.p.)

Fully refined:		
122-124	4.25	4.25
125-127	(i)4.35	(i)4.35
127-129	(i)4.70	(i)4.70
130-132	(i)5.00	(i)5.00
132-134	(i)5.25	(i)5.25
135-137	(i)6.00	(i)6.00

(a) Prices FOB Central Michigan refinery group basis, for shipment within Mich. Shipments may originate at plants outside Central group. (b) For shipment to Texas and New Mexico destinations: Group 3 prices quoted on northern shipments. (c) Excluding Detroit shipment. (e) One refiner quoting. (f) No price reported. (g) To resellers holding licenses. (h) Two refiners quoting. (i) Same prices quoted in bags or slabs loose. (j) For shipment to Ark. points only. (k) Two suppliers quoting. (l) Quotations. (m) Sales.

TANK WAGON MARKETS

Tank car, tank wagon, dealer, and service station prices for gasoline **do not include taxes;** *they do, however, include inspection fees as shown in general footnote. Gasoline taxes, shown in separate column, include 1c federal, and state taxes; also city and county taxes as indicated in footnotes. Kerosine tank wagon prices also do not include taxes; kerosine taxes, where levied, are indicated in footnotes. Dealer discounts are shown in footnotes; for commercial consumer discounts, see NPN for March 29, 1939, or write to NPN. These prices in effect April 3, 1939, as posted by principal marketing companies at their headquarters offices, but subject to later correction.*

S. O. New Jersey

Essolene
(*Regular Grade*)

	Consumer Tank Car	Dealer T.W.	Gasoline Taxes	Kerosine T.W.
*Atlantic City, N. J.	6.9	8.7	4	7
*Newark, N. J.	6.9	8.7	4	7
Annapolis, Md.	7.85	9.35	5	8
Baltimore, Md.	7.25	8.75	5	8
Cumberland, Md.	8.65	11.15	5	10
Washington, D. C.	7.5	9	3	9.5
Danville, Va.	8.45	10.95	6	12.9
Norfolk, Va.	7.25	9.75	6	11.5
Petersburg, Va.	7.55	10.05	6	11.7
Richmond, Va.	7.55	10.05	6	8.7
Roanoke, Va.	8.75	11.25	6	11
Charleston, W. Va.	8.05	10.55	6	12.6
Parkersburg, W. Va.	7.35	9.35	6	11.2
Wheeling, W. Va.	8.35	10.25	6	12.2
Charlotte, N. C.	8.65	11.15	7	12.1
Hickory, N. C.	9.15	11.65	7	12.5
Mt. Airy, N. C.	8.95	11.45	7	12.3
Raleigh, N. C.	8.25	10.75	7	11.6
Salisbury, N. C.	8.75	11.25	7	12.2
Charleston, S. C.	7.25	9.75	7	10.6
Columbia, S. C	8.25	10.75	7	11.6
Spartanburg, S. C.	8.95	11.45	7	12.4

Discount to undivided dealers: thru territory, except New Jersey points, which see in "Note" below: Dealer t.w. price less 0.5c per gal.

*Effective Dec. 1, 1938, S. O. New Jersey posted a minimum retail resale price of 11.2c thru New Jersey, except Trenton area and Cumberland county.

Note: While the above posted prices continue at Atlantic City and Newark, N. J., dealers will pay a net price of 8.2c per gal. for Essolene. Dealers having pumps marked only Esso, Essolene and "Standard" White gasoline will pay 7.7c per gal. for Essolene.

Kerosine Discount: 1c off t.w. price for 25 gals., or more, under contract thru territory (Baltimore City contract not necessary) except no discount in state of New Jersey.

Socony-Vacuum Oil Co., Inc.

(*S. O. New York Division*)

	Socony Mobilgas (*Regular Grade*) Consumer Tank Car	"Split" Dealer T.W.	Gasoline Taxes	Kerosine T.W.
Metropolitan N. Y. City: Boroughs of Manhattan, Bronx and Brooklyn (Kings and Queens)	6.5	7.9	*5	7
Borough of Richmond (Staten Is.)	6.5	8.4	*5	7
Albany, N. Y.	6.5	8.5	5	7.25
Binghamton, N. Y.	7.5	9.5	5	8.25
Buffalo, N. Y.	7	6.8	5	7
Jamestown, N. Y.	7.25	7.9	5	7.5
Plattsburg, N. Y.	7	9.3	5	7.5
Rochester, N. Y.	7.25	7.75	5	8
Syracuse, N. Y.	7	9	5	7.5
Danbury, Conn.	7.25	9.3	4	7.75
Hartford, Conn.	6.75	8.8	4	6.50
New Haven, Conn.	6.75	8.5	4	6
Bangor, Me.	6.75	7.8	5	7.25
Portland, Me.	6.5	8.5	5	7
Boston, Mass.	6.25	8	4	6.75
Concord, N. H.	7.2	9.5	5	7.75
Lancaster, N. H.	8	10.5	5	8.75
Manchester, N. H.	7.1	9.1	5	7.5
Providence, R. I.	6.25	8.3	4	6.75
Burlington, Vt.	7	8.5	5	7.5
Rutland, Vt.	7.3	9.5	5	7.75

*Plus 2% city sales tax computed at time of each sale.

Discount to undivided dealers: 0.5c less than "split" dealer t.w.

Atlantic Refining

Atlantic White Flash Gasoline
(*Regular Grade*)

	Commercial Tank Car	Dealer T.W.	Gasoline Taxes	Kerosine T.W.
Philadelphia Pa.	7	8.5	5	10
Pittsburgh	8	8.5	5	10.5
Allentown	7.5	9	5	10.5
Erie	8	9	5	10
Scranton	7.5	9	5	10.5
Altoona	8	10	5	10.5
Harrisburg	7.5	9	5	10.5
Williamsport	7.5	9	5	10.5
Dover, Del.	...	8.5	5	10.5
Wilmington	...	8.5	5	9.75
Boston, Mass.	...	8	4	6.25
Springfield, Mass.	...	8.8	4	7
Worcester, Mass.	...	8.8	4	7
Fall River, Mass.	...	8.5	4	8
Hartford, Conn.	...	8.8	4	7
New Haven, Conn.	...	8.5	4	7
Providence, R. I.	...	8.3	4	7
Atlantic City, N. J.	...	8.2	4	7
Camden, N. J.	...	8.1	4	7
Trenton, N. J.	...	8.2	4	7
Annapolis, Md.	...	9.35	5	9.5
Baltimore, Md.	...	8.75	5	8
Hagerstown, Md.	...	9.85	5	10
Richmond, Va.	...	10.05	6	10.7
Wilmington, N. C.	...	9.85	7	10.8
Brunswick, Ga.	...	8	7	*10.5
Jacksonville, Fla.	...	8	8	10

*Georgia has kerosine tax of 1c per gal., not included in above price.

Discount to undivided dealers: Dealer t.w. less 0.5c per gal. except in Georgia and Florida, dealer t.w. and undivided dealer price is same.

S. O. Ohio

Sohio X-70 Gasoline
(Regular Grade)

	Consumer T.W.	†Divided Dlr.	Gasoline Taxes	Kerosine T.W.
Ohio Statewide	11	10	5	*12
Akron	10	8	5	*8.5
Cincinnati	11	9	5	*12
Cleveland	11	10	5	*12
Columbus	10	9	5	*12
Dayton	10	8.5	5	*12
Marietta	10	8.5	5	*12
Portsmouth	11	10	5	*12
Toledo	10	7.5	5	*12
Youngstown	10	8.5	5	*11.5

Renown Gasoline
(Third Grade)

Ohio Statewide	10.5	9.5	5	....
Akron	10	8	5	....
Cincinnati	11	9	5	....
Cleveland	10.5	9.5	5	....
Columbus	9.5	8.5	5	....
Dayton	10	8.5	5	....
Marietta	10	8.5	5	....
Portsmouth	10.5	9.5	5	....
Toledo	9.5	7	5	....
Youngstown	10	8.5	5	....

Note: Prices at other Ohio points may be obtained by writing NPN.

*Ohio has kerosine tax of 1c per gal., not included in above prices.

†This price also to authorized agents, exclusive of 0.5c rental.

Discount to undivided dealers: 0.5c less than divided dealer t.w.

Sales tax: Ohio's 3% sales tax, effective Jan. 27, 1935, is added "where assessable, to regular posted prices", S. O. Ohio says.

S. O. Kentucky

Crown Gasoline
(*Regular Grade*)

	Consumer T.W.	Net Dlr.	Gasoline Taxes	Kerosine T.W
Covington, Ky.	11.5	8.5	6	9.5
Lexington, Ky.	13	10	6	10
Louisville, Ky.	11.5	8.5	6	9
Paducah, Ky.	12.5	9.5	6	9
Jackson, Miss.	10.5	7.5	7	*9
Vicksburg, Miss.	12	9	7	*8.5
Birmingham, Ala.	12	9	*8	8.5
Mobile, Ala.	12	9	*9	8.5
Montgomery, Ala.	12	10	*9	*9.5
Atlanta, Ga.	11.5	8.5	7	*7.5
Augusta, Ga.	12.5	9.5	7	*9
Macon, Ga.	13	10	7	*9
Savannah, Ga.	10.5	7.5	7	*7
Jacksonville, Fla.	11	8	8	8
Miami, Fla.	11	8	8	8
Pensacola, Fla.	11	8	*9	8
Tampa, Fla.	11	8	8	8

Kyso Gasoline
(*Third Grade*)

Covington, Ky.	10	7.5	6	....
Lexington, Ky.	11.5	9	6	....
Louisville, Ky.	10	7.5	6	....
Paducah, Ky.	10.5	8	6	....
Jackson, Miss.	8.5	6	7	....
Vicksburg, Miss.	10	7.5	7	....
Birmingham, Ala.	10	7.5	*8	....
Mobile, Ala.	9.5	7	*9	....
Montgomery, Ala.	11	8.5	*9	....
Atlanta, Ga.	10	7.5	7	....
Augusta, Ga.	11	8.5	7	....
Macon, Ga.	11	8.5	7	....
Savannah, Ga.	8.5	6	7	....
Jacksonville, Fla.	9.5	7	8	....
Miami, Fla.	9.5	7	8	....
Pensacola, Fla.	9.5	7	*9	....
Tampa, Fla.	9.5	7	8	....

Discounts to all tank wagon consumers: Effective Jan. 4, 1937, thru territory, on Crown gasoline, 3c per gal. below consumer t.w. price; on Kyso, 2.5c below, regardless of quantity purchased, per month

**Taxes*: In the tax column is included these city and county gasoline taxes at the following points: Mobile, 2c city; Birmingham, 1c city; Montgomery, 1c city and 1c county; Pensacola, 1c city. Georgia and Montgomery, Ala. have kerosine taxes of 1c per gal., and Mississippi 0.5c, not included in above prices.

S. O. Indiana

Red Crown (*Regular Grade*)
Stanolind (*Third Grade*)

	Red Crown Cons. T.W.	Dealer Prices Red Crown	Stanolind	Gasoline Taxes	Kerosine T.W.
Chicago, Ill.	11.1	8.1	6.4	4	10
Decatur, Ill.	11.1	8.6	6.7	4	10
Joliet, Ill.	11.1	8.6	8.4	4	10
Peoria, Ill.	11.1	9.1	8.5	4	10
Quincy, Ill.	10.9	8.9	5.8	4	8.7
Indianapolis, Ind.	11.8	10.3	8.9	5	*10
Evansville, Ind.	11.6	10.1	7	5	*10.5
South Bend, Ind.	12.1	10.6	9.2	5	*9
Detroit, Mich.	9.1	7.6	7.1	4	7.1
Grand Rapids, Mich.	10	8.5	8	4	9.7
Saginaw, Mich.	11.8	9.1	8.1	4	9.3
Green Bay, Wis.	11.9	10	7.8	5	10.3
Milwaukee, Wis.	9.9	8.4	7.3	5	10.2
La Crosse, Wis.	11.5	10	9.5	5	10.4
Minneapolis-St. Paul	11.5	10	9	5	10.4
Duluth, Minn.	11.9	10.4	9.4	5	10.8
Mankato, Minn.	11.5	10	9.5	5	9.4
Des Moines, Ia.	10.9	9.4	8	4	*9.8
Davenport, Ia.	11.1	9.6	9.1	4	*10
Mason City, Ia.	11.3	9.8	9.1	4	*10.2
St. Louis, Mo.	10.2	8.7	7.5	*4	8
Kansas City, Mo.	10.4	8.4	6.9	*4	8
St. Joseph, Mo.	10.4	8	6.9	*4	8.4
Fargo, N. D.	12.7	11.2	10.7	4	11.6
Huron, S. D.	12	10.5	10	5	10.9
Wichita, Kans.	9.9	7.1	6.5	4	7.4

**Taxes*: in the tax column is included these city and state gasoline taxes at following points: Kansas City, St. Joseph and St. Louis, 1c city tax. Kerosine taxes: Indiana has 4c, Iowa 3c per gal. state tax, not included in above prices.

S. O. Nebraska

Standard Red Crown Gasoline
(*Regular Grade*)

	T.W.	Dealer	Gasoline Taxes	Kerosine T.W.
Omaha, Neb.	11.5	9	6	10.3
McCook	12	10	6	10.5
Norfolk	11.9	9.4	6	10.7
North Platte	12.3	9.9	6	11.1
Scottsbluff	11.6	9.5	6	11.7

S. O. Louisiana

Essolene
(*Regular Grade*)

	Consumer Tank Car	Dealer T.W.	Gasoline Taxes	Kerosine T.W.
Little Rock, Ark.	7.25	9.75	7.5	10
Alexandria, La.	6.75	9.25	8	*11.5
Baton Rouge, La.	6.75	9.25	8	*9.5
New Orleans, La.	6.75	9.25	*10	*9
Lake Charles, La.	6.75	9.25	8	*11.5
Shreveport, La.	5.5	8	8	*10
Lafayette, La.	7	9.5	8	*11.5
Bristol, Tenn.	10.25	11.25	8	14.5
Chattanooga, Tenn.	9.5	11	8	14
Knoxville, Tenn.	10	12.5	8	14.5
Memphis, Tenn.	8	10.5	8	12.5
Nashville, Tenn.	9	9.5	8	12

**Taxes*: New Orleans gasoline tax includes 7c state, 1c federal, and 2c parish tax. Louisiana has kerosine tax of 1c per gal.; in addition New Orleans has 1c parish tax, none of which are included in above prices.

Price basis to dealers: Undivided dealers get dealer price, less 0.5c.

Above prices include these inspection fees on both gasoline and kerosine unless otherwise specified, per gallon, figured on basis of 50 gallons per barrel:
Alabama, 1/40c on gasoline, 1/2c on kerosine; Arkansas, 1/5c per gal. in a single barrel, 1/20c per gal. in bulk; Florida 1/8c; Illinois, 3/100c; Indiana, 1/5c per gal. in lots up to 25 bbls.; 2/25c per gal. in lots of 25 bbls. or more; Kansas, 1/50c, (3/50c can be charged to meet inspection department expenses); Louisiana, 1/32c; Minnesota, 1/25c; Missouri, 3/100c; Nebraska, 3/100c; Nevada, gasoline, 1/20c; North Carolina, 1/4c; North Dakota, 1/20c; Oklahoma, 2/25c per gal. lots of more than 50 in bbls., 1/5c in lots less than 50 bbls.; South Carolina, 1/8c; South Dakota, 1/10c; Tennessee, 2/5c; and Wisconsin, 3/100c.
Kerosine inspection fee only: Iowa, 3/50c; Michigan, 1/5c per gal.

TANK WAGON MARKETS

Tank car, tank wagon, dealer, and service station prices for gasoline **do not include taxes;** *they do, however, include inspection fees as shown in general footnote. Gasoline taxes, shown in separate column, include 1c federal, and state taxes; also city and county taxes as indicated in footnotes. Kerosine tank wagon prices also do not include taxes; kerosine taxes, where levied, are indicated in footnotes. Dealer discounts are shown in footnotes; for commercial consumer discounts, see NPN for March 29, 1939, or write to NPN. These prices in effect April 3, 1939, as posted by principal marketing companies at their headquarters offices, but subject to later correction.*

Humble Oil & Refining Co.

Humble Motor Fuel
(*Regular Grade*)

	*T.W.	S.S.	Gasoline Taxes	Kerosine T.W.
Dallas, Tex	7	11	5	8
Ft. Worth, Tex	7	11	5	7
Houston, Tex	8	12	5	8
San Antonio, Tex	9	13	5	8

U. S. Motor Gasoline
(*Third Grade*)

Dallas, Tex	6	9	5	
Ft. Worth, Texas	6	9	5	
Houston, Tex	6	..	5	
San Antonio, Tex	6	..	5	

Thriftane
(Leaded, 67 Octane, Purple Gasoline)

Houston	7	10	5	
San Antonio	8	11	5	

*These tank wagon prices apply to all classes of dealers and consumers

Continental Oil

Conoco Bronze (*Regular Grade*)
Demand (*Third Grade*)

	—Dealer Prices— Conoco Bronz-z-z	De-mand	Gasoline Taxes	Kerosine ‡T.W.
Denver, Colo	10.5	9.5	5	11.5
Grand Junc., Colo	13	12	5	15
Pueblo, Colo	9	8	5	10.5
Casper, Wyo	12	11	5	11.5
Cheyenne, Wyo	10	9	5	13
Billings, Mont	12	10	6	13
Butte, Mont	13.5	10.5	6	15.5
Great Falls, Mont	12	10	6	15.5
Helena, Mont	13	11	6	15.5
Salt Lake City, Utah	12	11	5	16
Boise, Ida	**14.1	**11.6	6	18
Twin Falls, Ida	**14.6	**13.6	6	18
Albuquerque, N. M	10	8	†6.5	10
Roswell, N. M	8.5	7.5	†6.5	8
Santa Fe, N. M	10	9	*7	10.5
Muskogee, Okla	8	6.5	5	7
Oklahoma City, Okla	6	5	5	6.5
Tulsa, Okla	5.5	5	5	6.5
Ft. Smith, Ark	8.25	5.75	5	7.5
Little Rock, Ark	9.25	8	7.5	8
Texarkana, Ark	7	6	5	8

†Includes city tax of 0.5c.
*Includes 1c city tax.
‡Prices are in t.w. deliveries to consumers and dealers.
**Prices include 0.1c to cover 1-mill tax for toll bridges.

S. O. California

Standard Gasoline
(*Regular Grade*)

	T.W.	S.S.	Gasoline Taxes	Kerosine T.W.
San Francisco, Cal	13.5	14.5	4	11.5
Los Angeles, Cal	13	14	4	10
Fresno Cal	14.5	15.5	4	12.5
Phoenix, Ariz	15.5	16.5	6	*12.5
Reno, Nev	15.5	16.5	5	13.5
Portland, Ore	14	15	6	13.5
Seattle, Wash	14	15	6	13.5
Spokane, Wash	17	18	6	16.5
Tacoma, Wash	14	15	6	13.5

Flight Gasoline
(*Third Grade*)

San Francisco, Cal	12	13	4	....
Los Angeles, Cal	11.5	12.5	4	....
Fresno, Cal	13	14	4	....
Reno, Nev	14	15	5	....
Phoenix, Ariz	12	13	6	....
Portland, Ore	12.5	13.5	6	....
Seattle, Wash	12.5	13.5	6	....
Spokane, Wash	15.5	16.5	6	....
Tacoma, Wash	12.5	13.5	6	....

*Arizona has kerosine tax of 5c per gal., not included in above prices.

Discount to 100% dealers, thru territory, off posted t.w. prices, on gasolines: on Standard Ethyl, Standard Gasoline and Stanavo Aviation, 3c per gal.; on Flight gasoline, 2c.

Canada

PRICES OF IMPERIAL OIL LTD.
Per Imperial Gallon, which is 1.2 U. S. Gallons

3-Star Imperial Gasoline
(*Regular Grade*)

	T.W.	Gasoline Taxes	Kerosine T.W.
Hamilton, Ont	15	6	15.5
Toronto, Ont	15	6	15.5
Brandon, Man	21	7	22
Winnipeg, Man	19.5	7	20.5
Regina, Sask	19	7	21
Saskatoon, Sask	21.3	7	23.3
Edmonton, Alta	19.5	7	21.5
Calgary, Alta	16.5	7	18.5
Vancouver, B. C	16	7	23
Montreal, Que	14	6	14.5
St. John, N. B	13.5	10	17.5
Halifax, N. S	13.5	10	17.5

Discounts to undivided dealers, 1c off t.w. price, except Maritime Provinces where undivided dealers pay t.w. price. Divided dealers pay t.w. price, thru territory.

Aviation Gasoline

Following are tank car, tank wagon or dealer prices, as indicated, of aviation gasoline in several marketing territories.

S. O. OHIO
Thru Ohio
Esso Aviation

	Consumer T.W.	Gasoline Taxes
74 octane	15.5	5
80 octane	16.5	5
87 octane	17.5	5

Discounts: For delivery on contract to hangar operators and resellers: 2c below consumer posted t.w. price, shown above.

S. O. INDIANA
Stanavo Ethyl Aviation Gasoline
73 Octane Number

Chicago, Ill	14.9	
Detroit, Mich	16.5	4
Milwaukee, Wis	15.1	5
Minneapolis, Minn	15.3	5
St. Louis, Mo	14.5	3
Kansas City, Mo	14.2	*4
Fargo, N. D	16.5	4
Huron, S. D	15.8	5

*Includes 1c city tax.

HUMBLE OIL & REFINING CO.
Aviation Gasoline

	Tank Car
Baytown, Tex	8.5

CONTINENTAL OIL CO.
Conoco Special Gasoline

	Dealer Price	Gasoline Taxes
Denver, Colo	14.5	5
Cheyenne, Wyo	15	5
Helena, Mont	22	6
Salt Lake City, Utah	17.5	5
Albuquerque, N. M	14	*6.5

*Includes city tax of 0.5c.

S. O. CALIFORNIA
Stanavo Aviation Gasoline

	T.W.	
Phoenix, Ariz	17.5	6
Los Angeles, Cal	15	4
San Francisco, Cal	15.5	4
Reno, Nev	17.5	5
Portland, Ore	16	6
Seattle, Wash	16	6
Spokane, Wash	10	6

Note: For discounts, etc., see note under Standard and Flight gasoline above.

Naphtha (In Tank Wagon)

S. O. NEW JERSEY
Posted Tank Wagon Prices

	Mineral Spirits	V.M.&P.
Newark, N. J	11.5	15.5
Baltimore, Md	15.5	....
Washington, D. C	15	....

Discounts: Buyers taking following quantities at one time, get these discounts: Newark, 2c per gal. on 200 gals. or more; less than 200 gals., 0.5c higher price. Baltimore 2c off on 25 to 100 gals. and 3c on over 100 gals. Washington, 2c off to contract buyers.

SOCONY-VACUUM OIL CO.

Buffalo, N. Y	10.5	12
*New York City	9.5	10.5
Rochester, N. Y	12	12
Syracuse, N. Y	12	14.5
Boston, Mass	11	11
Bridgeport, Conn	11	11.5
Hartford, Conn	10.5	11
Providence, R. I	11	12

*Prices apply to consumers only in quantities over 1,000 gals. annually. For quantities under 1,000 gals. annually, add 0.5c per gal.

ATLANTIC REFINING CO.

Philadelphia, Pa	11.5	12.5
Lancaster, Pa	13	14
Pittsburgh, Pa	12.5	14.5

Note: Prices for Mineral Spirits also apply to Stoddard Solvent; and prices for V.M.&P. Naphtha apply also to Light Cleaners Naphtha

S. O. OHIO

	S.R. Solvent	V.M.&P. Naphtha
Thru Ohio	12.5	13.5

Note: V.M.&P. Naphtha prices also apply on Dry Cleaners naphtha and special Varnolene; Varnolene and Sohio Solvent 0.5c below these prices. Discounts to contract consumers off t.w. price; 300 to 999 gals., 0.5c; 1,000 to 2,499 gals., 0.75c· 2,500 to 4,999 gals., 1c; 5,000 or more gals., 1.5c.

S. O. INDIANA
(Prices include state and federal taxes)

	Oleum Spirits	V.M.&P. Naphtha	Stanisol
Chicago, Ill	16.2	16.5	15.9
Detroit, Mich	19.2	18.2	19.7
Kansas City, Mo	13.9	14.9	14.4
St. Louis, Mo	14.2	15.2	12.9
Milwaukee, Wis	18.8	19.8	19.3
Minneapolis, Minn	19	20	17.7

Note: All prices, with exception of Missouri points, include state tax. Prices shown are base prices, before discounts.

Naphtha (In Tank Cars)

In Tank Cars (F. o. b. refinery or seaboard terminal except Ohio, delivered price.)

	V.M.&P. Naphtha	Solvent
Baltimore	10.5	9.5
New York Harbor	10	9
Philadelphia district	10.5	9
Boston	10.5	9.5
Providence	10.5	9.5
†Ohio points, delivered	8.5	*8

*This is on rubber solvent.
†In Ohio, prices on D.C. naphtha and special Varnolene are same as V.M.&P.; on Varnolene and Sohio Solvent, prices are 0.125c less than on V.M.&P.

Price Changes

Dates and amounts of changes.
See table for full current prices.

Socony-Vacuum Oil—Socony Mobilgas:
New Haven split dealer t.w. up 1c, March 29.
Bangor split dealer t.w. cut 1.2c, March 26.

Kerosine:
New York City t. w. cut 0.5c, March 24.
Albany, Plattsburg, Danbury and Hartford t. w. cut 0.25c, March 29.
Burlington t. w. cut 1.5c, Feb. 10, to 7.5c, instead of 1.25c, as reported on page 44 of March 15 issue, Socony reports.

Atlantic Refining—Atlantic White Flash:
New Haven dealer t.w. up 1c, March 28.

Kerosine:
Boston t.w. cut 1.25c, March 25.

S. O. Kentucky—Crown and Kyso Gasolines:
Macon up 1c, March 24.

Kerosine:
Augusta t.w. up 1c, March 24.

S. O. Indiana—Red Crown Gasoline:
Saginaw dealer price cut 1.2c, March 7.

Stanolind—Dealer prices:
Decatur cut 0.5c, Feb. 3; cut 0.8c, Feb. 22.
Quincy cut 0.9c, Feb. 11.
Evansville cut 1.5c, March 3.
Saginaw cut 0.7c, March 11.
Green Bay cut 1.2c, March 23.
Mason City cut 0.7c, Feb. 17; up 0.5c, March 16.
Wichita up 0.5c, Feb. 23; up 0.5c, March 16.

Kerosine:
St. Joseph t.w. cut 1.4c, March 1; up 0.5c, March 16.
Wichita t.w. cut 0.4c, Jan. 18; up 0.5c, March 16.

S. O. Louisiana—Essolene:
Bristol dealer t.w. up 2.25c, March 29.

Continental Oil—Conoco Special Gasoline:
Helena dealer price should have been shown as 22c, since Nov. 1, 1938.

TRADEMARKS

The following are trademark applications pertinent to our field pending in the United States Patent Office which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade-Mark Company, Munsey Building, Washington, D. C., trademark specialists.

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TRACTANE, Ser. No. 412,751. Anderson-Prichard Oil Corporation, Oklahoma City, Okla. Filed Nov. 15, 1938.
For Fuel Oil Particularly Adapted for Tractors.

A. C., Ser. No. 411,157. John F. Feck, Cincinnati, Ohio. Filed Oct. 1, 1938.
For Lubricating Oils and Greases.

TRICO, Ser. No. 413,424. Trico Products Corporation, Buffalo, N. Y. Filed Dec. 2, 1938.
For Glass Cleaner.

* * *

KNIGHT AND REPRESENTATION OF A KNIGHT ON HORSEBACK IN CIRCLE COMPOSED OF LETTER "H." Ser. No. 412,166. Elmer S. Hobson, New York, N. Y. Filed Oct. 25, 1938.
For lubricating oils and greases.

Z39 on red and yellow circle. Ser. No. 399,851. The H. A. Montgomery Company, Detroit, Mich. Filed Nov. 17, 1937.
For lubricants, and particularly lubricants for springs.

ARO-LINE. Ser. No. 412,615. Stroock & Wittenberg Corp., New York City. Filed Nov. 10, 1938.
For synthetic resins.

AROFENE. Ser. No. 412,616. Stroock & Wittenberg Corp., New York. Filed Nov. 10, 1938.
For phenolic synthetic resins.

AROLITE. Ser. No. 412,617. Stroock & Wittenberg Corp., New York City. Filed Nov. 10, 1938.
For modified phenolic and other modified synthetic condensate resins.

* * *

HYDROGUM. Ser. No. 413,737. Reichhold Chemicals Inc., Detroit and Ferndale Station, Detroit, Mich. Filed Dec. 12, 1938.
For resins, particularly synthetic resins, and ester gums.

NOK-R-UST. Ser. No. 413,152. The Shaler Company, Waupun, Wis. Filed Nov. 25, 1938.
For penetrating oils.

RAPID GAS. Ser. No. 390,381. Rapid Gas Corporation, Cedar Rapids, Ia. Filed March 22, 1937.
For liquefied petroleum gas.

DEWAXIT. Ser. No. 385,422. Howard R. Neilson, doing business as Neilson Chemical Co., Detroit, Mich. Filed Nov. 11, 1936.
For chemical preparation for removing oils, greases, waxes, road scum, film or residues resulting from the use of paint removers, dirt and the like from painted, lacquered and enameled surfaces, and otherwise conditioning such surfaces for repainting or re-finishing with coating materials such as paints, lacquers, enamels, waxes, and the like.

* * *

SORB. Ser. No. 412,905. Floridin Company, Warren, Pa. Filed Nov. 18, 1938.
For agent prepared from natural earth and useful for the decolorizing or reclaiming of oils or cleaning solvents.

RUGLYDE. Ser. No. 413,881. Florence Rosen, doing business as American Grease Stick Co., Muskegon Heights, Mich. Filed Dec. 15, 1938.
For penetrating rubber lubricant.

UNICO QUALITY PRODUCTS, and design. Ser. No. 412,680. United Co-Operatives, Inc., Indianapolis, Ind. Filed Nov. 12, 1938.
For lubricating oils and greases, motor oils, ethyl gasoline, Regular gasoline, low grade gasoline, Kerosine, tractor distillates, and fuel oils.

CHANGES PING TO PURR. Ser. No. 413,746. Union Oil Company of California, Los Angeles, Calif. Filed Dec. 12, 1938.
For lubricating oil and gasoline.

HOMOCO, and representation of an eagle. Ser. No. 413,753. Jacob Homes, doing business as Homes Oil Co., Washington, D. C. Filed Dec. 7, 1938.
For gasoline and lubricating greases and oils.

"R" CHEMICALS and design. Ser. No. 410,979. Reichhold Chemicals, Inc., Detroit and Ferndale Station, Detroit, Mich. Filed Sept. 15, 1938.
For oils including processed oils and synthetic oils, and glycerine for use in printing inks, moldings and castings, composition masses, floor coverings, adhesives, water proofing materials, core oils, brake linings, and binders.

MAYAN. Ser. No. 402,900. Continental Oil Company, Ponca City, Okla. Filed Feb. 10, 1938.
For lubricating oil.

DU PONT in oval. Ser. No. 413,117. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Nov. 25, 1938.
For fuel oils and lubricating oils.

PENOLEAD. Ser. No. 413,159. Standard Oil Company of New Jersey, Wilmington, Del. Filed Nov. 25, 1938.
For lubricating grease.

MULTIPOWER MOTOR OIL and design. Ser. No. 413,638. The Ohio Oil Co., Findlay, O. Filed Dec. 9, 1938.
For motor oil.

TANK WAGON MARKETS, HEATING OILS

Prices in Effect April 3, 1939

Following are posted tank wagon prices of various grades of heating oil at the points shown in various territories. Prices are in cents per gallon.

S. O. NEW JERSEY	No. 1	No. 2	No. 4
Atlantic City, N. J.	7.0	5.75	5.75
Newark	7.0	5.75	5.75
Annapolis, Md.	....	6.5	....
Baltimore	7.0	6.5	6.0
Washington, D. C.	7.25	6.75	6.75
Norfolk, Va.	7.0	6.0	6.0
Petersburg	7.25	6.25	....
Richmond	7.25	6.25	6.25
Charlotte, N. C.	8.75	7.75	....
Hickory	....	8.25	....
Raleigh	8.75	7.25	....
Charleston, S. C.	8.5	7.0	....
Columbia	9.5	8.0	....
Spartanburg	10.2	8.7	....

SOCONY-VACUUM OIL CO. INC. (S. O. New York Division)	No. 2	No. 3	No. 4
New York City	5.75	5.75	5.75
Albany, N. Y.	5.75	5.75	5.75
Rochester, N. Y.	7.00	7.00	7.00
Boston, Mass.	5.50	5.50	5.50
Bangor, Me.	6.25	6.25	6.25
Manchester, N. H.	6.00	6.00	6.00
Burlington, Vt.	6.75	6.75	6.75
Hartford, Conn.	6.00	6.00	6.00
New Haven, Conn.	5.50	5.50	5.50
Providence, R. I.	5.75	5.75	5.75

Note: Prices for No. 1 fuel in Socony-Vacuum territory same as for kerosine which see in tank wagon table for various cities; prices change with kerosine.

ATLANTIC REFINING Numbers	1	2	3	4	5	6
Phila., Pa.	7.75	6.0	6.0	6.0	3.25	2.50
Allntn., Pa.	8.5	6.5	6.5	6.5	....	....
Wlmgtn., Del.	7.75	5.5	5.5	5.5	....	....
Sprngfld., Ms.	7.0	6.0	....	....	....	....
Wrcstr., Ms.	7.0	5.50	....	5.50	....	....
Hrtfd., Conn.	7.0	6.0	....	6.0	....	....

S. O. OHIO	No. 1	No. 2	No. 3
Columbus Division and Cleveland	7.50	7.50	7.00
City of Lima	8.00	8.00	7.00
Rest of Ohio	8.00	8.00	7.50

Note: S. O. Ohio prices are for full compartment hose dumps, bucket dumps are 0.5c per gallon higher.

S. O. INDIANA
Stanolex Fuel and Furnace Oils

	No. Fuel	Stanolex Furnace
Chicago	(a)6.75	6.75
Indianapolis	...	(b)7.8
Detroit	...	7.1
Milwaukee	8.4	7.7
Minneapolis	7.8	7.8
St. Louis	7.7	(c)6.7
Kansas City	6.8	6.8

(a) For 400 gals. and over; 150 to 399 gals.,7.25c; 1 to 149 gals., 8.25c.
(b) Excluding 4c state tax.
(c) For 400 gals. & over; 100 to 399 gals., 7c; 1 to 99 gals., 8c.

Note: Small-lot deliveries of light fuel oils range up to 2c higher than above quotations.

FUEL OIL

(*Continued from page* 34)

reported last week in the Mid-Continent light fuel oil market. Many refiners said they had discontinued making heating oils. There were reported no indications of price shading, according to reports. Heavy fuels were in better shape as refiners prepared to supply Spring road oil demand, reports indicated.

* * *

NEW YORK, April 3.—Most suppliers reported reduced kerosine and No. 1 fuel oil prices at New York harbor the past week. Prices for these two oils were 4.5 and 4.375 cents for tank car and barge shipments, respectively, according to reports.

Kerosine and No. 1 were dropped from 4.4 cents to 4.375 cents at Providence. No change was reported in fuel oil prices elsewhere along the seaboard.

Occasional reports of lower-priced offerings of No. 2 oil were heard at New York, but sellers said they were holding this oil for a minimum of 3.625 cents in barge lots.

* * *

Wax

NEW YORK, April 3.—Refined wax prices were advanced 0.25-cent by most suppliers at New York and New Orleans the week ended April 1, according to reports here. Some sellers also reported advancing their prices for white crude scale grades to 2.75 cents. Demand for wax continued to hold up well, according to reports, with supply from manufacturers in good balance with current takings.

Group 3 Freight Rates

To Division Headquarters Points of Standard Oil Co. of Indiana

	Gasoline-Kerosine Cents per Cwt.	Gasoline-Kerosine Cents per gal. 6.6 lbs.	Distillate-Gas Oil-Fuel Oil Cents per Cwt.	Distillate-Gas Oil-Fuel Oil Cents per gal. 7.4 lbs.
Chicago, Ill.	40	2.640	32	2.368
Decatur, Ill.	39	2.574	31	2.294
Joliet, Ill.	40	2.640	32	2.368
Peoria, Ill.	39	2.574	31	2.294
Quincy, Ill.	36	2.376	29	2.146
Indianapolis, Ind.	48	3.168	39	2.886
Evansville, Ind.	46	3.036	37	2.738
South Bend, Ind.	53	3.498	42	3.108
Detroit, Mich.	64	4.224	51	3.774
Gd. Rapids, Mich.	62	4.092	50	3.700
Saginaw, Mich.	66	4.356	53	3.922
Green Bay, Wis.	51	3.366	41	3.034
Milwaukee, Wis.	43	2.838	34.5	2.553
LaCrosse, Wis.	46	3.036	37	2.738
Min'ap'ls-St. Paul	46	3.036	37	2.738
Duluth, Minn.	52	3.432	41.5	3.071
Mankato, Minn.	46	3.036	37	2.738
Des Moines, Ia.	36	2.376	29	2.146
Davenport, Ia.	39	2.574	31	2.294
Mason City, Ia.	42	2.772	33.5	2.479
St. Louis, Mo.	33	2.178	26.5	1.961
Kansas City, Mo.	28	1.848	22.5	1.665
St. Joseph, Mo.	28	1.848	22.5	1.665
Fargo, N. D.	63	4.158	50.5	3.737
Minot, N. D.	83	5.478	66.5	4.921
Huron, S. D.	53	3.498	42.5	3.145
From Ponca City Wichita	13	*0.858	13	†0.858
From Tulsa	21	*1.386	21	†1.386
From Cushing	19	*1.254	19	†1.254

*This rate also includes distillate rate at 6.6 lbs. per gal.

†This rate is exclusive of distillate which is based on 6.6 lbs. per gal. from Ponca City, Tulsa and Cushing, Okla., to Wichita. Includes only gas oil and fuel oil.

NOTE: There is no Group 3 rate to Wichita, Kans.

SEABOARD MARKETS, EXPORT AND COASTWISE

All prices on this page are publisher's opinion of open market quotations or sales, for spot shipment (10 to 15 days). In cargo markets, spot shipment is 90 days. Prices in cents per gallon, except heavy fuel oil in dollars per barrel, in tank car lots, f.o.b. refineries or seaboard terminals in districts designated, unless otherwise noted. Federal, state or municipal taxes not included. Prices quoted apply on products made from legally produced crude. Unless otherwise noted, gasoline octane ratings are determined by C.F.R. Motor method, A.S.T.M. D-357-33T; and lubricating oil specifications determined according to A.S.T.M. methods, unless otherwise noted.

Eastern Domestic

(Inter-refinery and export prices not included.)

MOTOR GASOLINE

Prices Effective	April 3	
District:	60-64 Oct.	65 Oct. & Above
N. Y. harbor	5.75 – 6.25	5.75 – 6.25
(a)N. Y. harbor	5.50 – 6.00	5.50 – 6.00
Philadelphia	5.75 – 6.25	5.75 – 6.25
Baltimore	5.50 – 6.00	5.50 – 6.00
Norfolk	6.25 – 6.50	6.25 – 6.50
Wilmington, N. C.	6.50	6.50
Charleston, S. C.	6.50	6.50
Savannah	6.00 – 6.50	6.00 – 6.50
Jacksonville	6.00 – 6.50	6.00 – 6.50
Portland	6.25 – 6.50	6.50 – 7.00
Boston	5.75 – 6.00	5.75 – 6.00
Providence	5.75 – 6.00	5.75 – 6.00

WATER WHITE KEROSINE

District:			
N. Y. harbor	4.375–4.50	Charleston	5.00–5.25
(a)N. Y. harbor	4.25–4.375	Savannah	5.00–5.25
Philadelphia	4.75–5.00	Jacksonville	5.00–5.25
Baltimore	5.00–5.25	Portland	4.625
Norfolk	5.00–5.25	Boston	4.25–4.50
Wilmington, N. C.	5.00–5.25	Providence	4.375–4.50

(b) FUEL OILS

	N. Y. harb.	N. Y. harb. barges
No. 1	4.375– 4.50	4.25 – 4.375
Nos. 2-3	3.75 – 4.00	3.625– 4.00
No. 4	3.75 – 4.00	3.50 – 4.00
No. 5	(m)$1.15	.....
No. 6	$0.95	.....

	Phila. dist.	Balt. dist.
No. 1	4.75 – 5.00	5.00 – 5.25
Nos. 2-3	4.25	4.25
No. 4	4.00 – 4.25	4.00 – 4.25
No. 5	$1.15	$1.15
No. 6	$0.95	$0.95

	Bost. dist.	Prov. dist.
No. 1	4.25 – 4.50	4.375– 4.50
Nos. 2-3	3.80 – 4.25	3.875– 4.25
No. 4	3.80 – 4.25	3.875– 4.25
No. 5	$1.25	$1.15
No. 6	$0.95	$0.95

District:	(c)Bunker C Fuel	(c) Diesel Oil
N. Y. harbor	$0.95	$1.65
Philadelphia	$0.95	$1.65
Baltimore	$0.95	$1.65
Norfolk	$0.95	$1.65
Charleston	$0.90	$1.65
Savannah	$0.90	$1.785
Jacksonville	$0.90	$1.785
Tampa	$0.85	$1.785
Portland	$1.05	$1.75
Boston	$0.95	$1.65
Providence	$0.95	$1.65

	Gas Oil 28-34 Gravity	Diesel Oil Shore Plants
N. Y. harbor	3.75 – 4.00	3.75 – 4.00
Philadelphia dist.	4.25	....
Baltimore dist.	4.25	....
Norfolk dist.	4.25	....
Savannah dist.	....	4.25
Jacksonville dist.	....	4.25

Pacific Export

(c) (Quotations are at seaboard, Los Angeles, in cargo lots, cents per gal., except where otherwise noted.)

Prices Effective	April 3	March 27
U. S. Motor, under 65 oct.	4.125– 4.25	4.125– 4.25
400 e.p. blend, under 65 oct.	4.25 – 4.375	4.25 – 4.375
400 e.p. blend 65 oct. & above	4.375– 4.625	4.375– 4.625
(d) 38-40 gravity, w.w. kerosine	4.25 – 4.50	4.25 – 4.50
41-43 gravity, w.w. kerosine	4.50 – 4.75	4.50 – 4.75
44 gravity, w.w. kerosine	5.00 – 5.25	5.00 – 5.25
In Cargo lots, per bbl.		
Diesel fuel, 24° & above'	$0.95 –$1.05	$0.95 –$1.05
Diesel fuel, under 24°	$0.85 –$0.90	$0.85 –$0.90
(f) 30-34 gravity, diesel (gas oil)	$1.05 –$1.20	$1.05 –$1.20
(g) Grade C fuel oil	$0.65 –$0.68	$0.65 –$0.68

Prices Effective	April 3	March 27
In Ships' Bunkers, or deep tank lots, per bbl.:		
(f) Diesel fuel oil	$1.35 –$1.45	$1.35 –$1.45
(g) Grade C fuel oil	$0.70 –$0.90	$0.70 –$0.90
Cased Goods: (Per case)		
U. S. Motor	$1.35 –$1.45	$1.35 –$1.45
400 e.p. blend, under 65 octane	$1.50 –$1.60	$1.50 –$1.60
375-400 e.p. blend, 65 oct. & above	$1.60 –$1.70	$1.60 –$1.70
(d)40-43 gravity, w.w. kerosine	$1.30 –$1.40	$1.30 –$1.40
Kerosine, p.w.	$1.25 –$1.35	$1.25 –$1.35

New York Export

(Cents per gal. in bbls. FAS. New York)

CYLINDER OILS (Pennsylvania Products)

Bright stock:		
Light, 25 p.t.	22.50	22.50
Neutral oil:		
200 3 color, 25 p.t.	23.50	23.00
150 3 color, 25 p.t.	21.50	21.00
600 s.r., unfiltered	15.50	15.50
650 s.r., unfiltered	17.50	16.50
600 fl., s.r.	18.00	18.00
630 fl., s.r.	20.50	20.50

Wax, Domestic *and* Export

(A.S.T.M. Tests. Melting points, however, are A.M.P., 3 higher than E.M.P. Export prices, FAS., carloads. Domestic prices, FOB. refineries, in bags, carloads, with 0.2c discount allowed for shipment in bulk, except where noted below. Scale solid; fully refined, slabs in bags)

Prices Effective	April 3	
	New York	
	Domestic	Export
124-6 Y.C. scale	2.75	2.75
122-4 W.C. scale	2.75	2.75
124-6 W.C. scale	2.75	2.75
123-5 Fully rfd.	4.00	3.625
125-7 Fully rfd.	4.15	3.75
128-30 Fully rfd.	(h) 4.25	4.00
130-2 Fully rfd.	(h) 4.60	4.25
133-5 Fully rfd.	(h) 4.90	4.65
135-7 Fully rfd.	(h) 5.15	5.00
	New Orleans	
	Domestic	Export
124-6 Y.C. scale	2.75	2.75
122-4 W.C. scale	2.75	2.75
124-6 W.C. scale	2.75	2.75
123-5 Fully rfd.	4.00	3.625
125-7 Fully rfd.	4.15	3.75
128-30 Fully rfd.	(h) 4.25	4.00
130-2 Fully rfd.	(h) 4.60	4.25
133-5 Fully rfd.	(h) 4.90	4.65

Gulf Coast

(FOB. ship at Gulf; minimum 20,000 bbls.; representing traders' opinions)

Prices Effective	April 3	March 27
For Domestic shipment:		
MOTOR GASOLINE		
59 oct. & below	4.25 – 4.50	4.25 – 4.50
60-64 oct.	4.25 – 4.625	4.25 – 4.625
65-67 octane	4.50 – 4.875	4.50 – 4.875
68-70 octane	4.875– 5.125	4.875– 5.125
FUEL OILS		
No. 1	3.625– 4.00	3.625– 4.00
No. 2	3.125– 3.375	3.125– 3.375
KEROSINE		
41-43 gravity, w.w.	3.625– 3.875	3.625– 3.875
For Export Shipment:		
GASOLINE		

April 3

Gasoline:	60-62 Gravity, 400 e.p.	61-63 Gravity, 390 e.p.	64-66 Gravity, 375 e.p.
60 octane	4.25 – 4.375	4.25 – 4.375	4.25 – 4.375
61 octane	4.25 – 4.40	4.25 – 4.40	4.25 – 4.40
62 octane	4.25 – 4.45	4.25 – 4.45	4.25 – 4.45
63 octane	4.375– 4.50	4.375– 4.50	4.375– 4.50
64 octane	4.375– 4.55	4.375– 4.55	4.375– 4.55
65 octane	4.50 – 4.75	4.50 – 4.75	4.50 – 4.75
66 octane	4.625– 4.75	4.625– 4.75	4.625– 4.75
67 octane	4.625– 4.875	4.625– 4.875	4.625– 4.875
68 octane	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00
70 octane	5.00 – 5.50	5.00 – 5.50	5.00 – 5.50

Prices Effective	April 3	March 27
For Export Shipment:		
KEROSINE		
44 gravity, w.w.	4.125– 4.25	4.125– 4.25
41-43 gravity, w.w.	3.625– 3.875	3.625– 3.875
41-43 gravity, p.w.	3.625– 3.875	3.625– 3.875
GAS AND BUNKER OILS		
For Export Shipment:		
Gas Oil (i):		
Below 43 diesel index	3.125– 3.25	3.125– 3.25
43-47 diesel index	3.25 – 3.50	3.25 – 3.50
48-52 diesel index	3.375– 3.625	3.375– 3.625
53-57 diesel index	3.50 – 3.75	3.50 – 3.75
58 & above	3.625– 3.875	3.625– 3.875
For Domestic or Export Shipment:		
(c) Diesel Oil	$1.45	$1.45
(c) Grade C bunker oil	$0.75	$0.75
Grade C bunker oil, in cargoes	$0.73 –$0.75	$0.70 –$0.72

MID-CONTINENT LUBRICATING OILS

(Cents per gal. at Gulf; in bbls., FAS.; in bulk, FOB. terminals)

April 3

	(j) Barrels	Bulk
190-200 vis. D. 210 brt. stock	21.50	17.80
150-160 vis. D 210 brt. stock:		
0-10 p.p.	18.00 –18.625	13.625–14.30
10-25 p.p.	17.50 –18.125	13.125–13.80
150-160 vis. E. 210 brt. stock	17.50	13.80
120 vis. D 210 brt. stock	17.25 –17.50	13.00 –14.50

	April 3 Bulk	March 27 Bulk
180 vis. No. 3 color neutral:		
0-10 p.p.	10.05 –11.625	9.80 –10.50
15-30 p.p.	9.55 –11.125	9.50 –10.00
200 vis. No. 3 color neutral:		
0-10 p.p.	10.80 –11.50	10.30 –10.50
15-30 p.p.	10.30 –10.625	9.50 –10.00
600 s.r. olive green	9.00 –11.25	9.00 –11.25
600 s.r. dark green	7.00 – 9.25	7.00 – 9.25

SOUTH TEXAS LUBRICATING OILS

(Vis. at 100° cold test 0, bulk export shipment, FOB terminals.)

Unfiltered Pale Oils: Vis. Color		
100 No. 3	4.50 – 4.75	4.50 – 4.75
200 No. 3	6.00 – 6.25	6.00 – 6.25
300 No. 3	6.50 – 6.75	6.50 – 6.75
500 No. 3½	7.50	7.50
750 No. 4	8.00 – 8.25	8.00 – 8.25
1200 No. 4	8.375– 8.75	8.375– 8.75
2000 No. 4	8.50 – 9.00	8.50 – 9.00
Red Oils: Vis. Color		
100 No. 5-6	4.50 – 4.75	4.50 – 4.75
200 No. 5-6	6.00 – 6.25	6.00 – 6.25
300 No. 5-6	6.50 – 6.75	6.50 – 6.75
500 No. 5-6	7.50	7.50
750 No. 5-6	8.00 – 8.25	8.00 – 8.25
1200 No. 5-6	8.375– 8.75	8.375– 8.75
2000 No. 5-6	8.50 – 9.00	8.50 – 9.00

Note: Red oil prices cover oils with green cast; prices for blue cast red oils are slightly lower in some cases.

Tanker Rates

(Approximate freight rates to Continental ports shillings per ton of 2240 lbs., British sterling: U. S. ports cents per bbl.)

Rates Effective April 3

	Crude &/or Fuel		Refined Oil &/or Spirits	
	Last Paid	Owners Ask	Last Paid	Owners Ask
Gulf-U.K./Cont.(k)	10/4½	10/6-11/3	10/1½	10/6-11/3
Aruba-U.K./Cont.(k)	9/3	9/6-10	9/3	9/6-10
Gulf-N.Atlantic (l) (not E. of N.Y.): Hvy. Crude & fuel, (10 to 19.9 gravity)	17c	17-18c	....	....
Light Crude, (30 Grav. or Lighter)	16c	16-17c	....	....
Gasoline	....	....	15c	15-16c
Kerosine	....	....	16c	16-17c
Light Fuel	....	....	17c	17-18c

(a) In barge lots. (b) Fuel oils meet specifications of U. S. Commercial standards CS12-35. (c) Ships' bunkers. Lighterage, additional at some points, not included. (d) 150 fire point. (e) For San Francisco cargo prices, add 5c per bbl. to cargo prices shown above. (f) Pacific Specification 200. (g) Pacific Specification 400. (h) Shipment in bags or in bulk. (i) Less than ½ of 1% sulfur. (j) Second-hand barrels. (k) Continental ports in range between Bordeaux and Hamburg, both inclusive. (l) Venezuela loading, same rate; Tampico, 2c to 3c per bbl. additional. (m) Low pour test, low viscosity, No. 5 generally quoted at $1.25.

CRUDE OIL MARKETS

Prices in $ per bbl. of 42 U. S. gals. at the well. A. P. I. gravity. Prices are effective as of 7 a. m. of dates as given

EASTERN FIELDS

Posted by Joseph Seep Purchasing Agency
(Effective March 6, 1939, except Corning Jan. 24, 1939)

Penna. Grade Oil in Southwest Penna. Pipe Lines.....$1.65
Penna. Grade Oil in Eureka Pipe Lines (West Virginia).....$1.59
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O.).....$1.55
Corning Oil in Buckeye Pipe Lines (Ohio)..$1.02

Posted by Other Companies

Tide Water Associated Oil Co.
Bradford-Allegany district (Penna. and N. Y.) (Effective March 6, 1939).....$2.00
*The Pennzoil Co.: (Effective March 6, 1939)
Penna. Grade Oil in National Transit Lines *1.93
*The Pennzoil Co. posts $1.93 in Cochran, Franklin, Hamilton and Doolittle, Pa. fields, prices in other lower districts range down to $1.88 per bbl. at well.

MICHIGAN

Posted by Pure Oil Co.
Midland, Midland County (Oct. 14, 1938)....$0.925

Posted by Simrall Corp.
(Effective Jan. 6, 1939)

Crystal, Greendale, Porter and equal grades..$0.925
Beaverton, Buckeye, Bentley, Edenville.....$0.90
Freeman.....$0.82
(Effective Dec. 13, 1938)
West Branch, Arenac, and equal grades....$0.70

Posted by Bay Pipe Line Corp.
(Effective Jan. 1, 1939)

Bentley and Buckeye.....$0.90
Saginaw and Wise.....$0.925

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.
(Effective Oct. 13, 1938)

Illinois and Princeton.....$1.05
Illinois Basin.....$1.15
Owensboro, (Western Ky.).....$1.10
Lima, O.....$0.90

Posted by Sohio Corp.

Illinois Basin:
Beecher City (Effective Oct. 13, 1938).....$1.15
Centralia Field:
Congested District (Effective Oct. 1, 1938) .$1.15
Area Outside Congested District (Effective Oct. 13, 1938).....$1.15

Posted by Carter Oil Co.
(Effective Oct. 14, 1938)

Louden, Fayette County, Ill.....$1.15

Posted by Ashland Oil & Transportation Co.
(Effective Oct. 14, 1938)

Somerset Oil in Ashland Lines, Kentucky:
Big Sandy River.....$1.12
Kentucky River.....$1.20

Posted by Stoll Oil Refining Co.
(Effective Nov. 10, 1938)

Stoll Pipe Line Oil (Ky.).....$1.00

Posted by Fordsville Gathering Line, Inc.
(Effective Dec. 24, 1938)

Birk City Field, Ky.....$1.05
(Effective Oct. 13, 1938)
Owensboro District, Ky.....$1.10

CANADIAN FIELDS

Posted by Imperial Oil Limited
Western Ontario
(Effective Oct. 25, 1938)

Petrolia.....$1.90
Oil Springs.....$1.97

Alberta—Turner Valley
(Prices f.o.b. field tankage)
(Effective Jan. 5, 1938)

Crude Oil

40-40.9°	$1.14	53-53.9	$1.40
41-41.9	1.16	54-54.9	1.42
42-42.9	1.18	55-55.9	1.44
43-43.9	1.20	56-56.9	1.46
44-44.9	1.22	57-57.9	1.48
45-45.9	1.24	58-58.9	1.50
46-46.9	1.26	59-59.9	1.52
47-47.9	1.28	60-60.9	1.54
48-48.9	1.30	61-61.9	1.56
49-49.9	1.32	62-62.9	1.58
50-50.9	1.34	63-63.9	1.60
51-51.9	1.36	64-64.9	1.62
52-52.9	1.38		

Crude Naphtha, 65 grav. & above.....$2.14

Absorption Gasoline

90% Rec., 20 lb. Reid v.p.....$1.94
90% Rec., 17 lb. Reid v.p.....$2.08

MID-CONTINENT

Oklahoma-Kansas

*(Effective Oct. 11 to 22, 1938; and Feb. 16, 1939)

	S. O. Indiana	Carter Mag-nolia Shell	Conti-nental Texas Co.	Sin-clair-Prairie
Below 21°	$0.70	$0.60	....	....
21-21.9	.72	.63	....	....
22-22.9	.74	.66	....	....
23-23.9	.76	.69	....	....
24-24.9	.78	.72	....	....
25-25.9	.80	.75	....	$0.58
26-26.9	.82	.78	....	.63
27-27.9	.84	.81	....	.68
28-28.9	.86	.84	$0.86	.73
29-29.9	.88	.87	.88	.78
30-30.9	.90	.90	.90	.82
31-31.9	.92	.92	.92	.86
32-32.9	.94	.94	.94	.90
33-33.9	.96	.96	.96	.96
34-34.9	.98	.98	.98	.98
35-35.9	1.00	1.00	1.00	1.00
36-36.9	1.02	1.02	1.02	1.02
37-37.9	1.04	1.04	1.04	1.04
38-38.9	1.06	1.06	1.06	1.06
39-39.9	1.08	1.08	1.08	1.08
40 & above	1.10	1.10	1.10	1.10

*Effective by Carter Oil, Oct. 13, posting in Okla. only; Continental Oil, Oct. 11, with lowest grade below 29; Magnolia, Oct. 12, posting in Okla. only; Shell, Oct. 22; Sinclair-Prairie, Feb. 16, 1939; S. O. Indiana, Oct. 17; The Texas Co., Oct. 12.

North-North Central and Central Texas

*Effective 1938:	Stano-lind Oct. 17	†Sinclair-Prairie Oct. 11	*Texas Co. *Conti-nental *Magnolia
Below 21°..	$0.60	....	....
21-21.9....	.62	....	....
22-22.9....	.64	....	....
23-23.9....	.66	....	....
24-24.9....	.68	$0.76	$0.79
25-25.9....	.70	for	for
26-26.9....	.72	oil	oil
27-27.9....	.74	below	below
28-28.9....	.76	29°.	29°.
29-29.9....	.78	.78	.81
30-30.9....	.80	.80	.83
31-31.9....	.82	.82	.85
32-32.9....	.84	.84	.87
33-33.9....	.86	.86	.89
34-34.9....	.88	.88	.91
35-35.9....	.90	.90	.93
36-36.9....	.92	.92	.95
37-37.9....	.94	.94	.97
38-38.9....	.96	.96	.99
39-39.9....	.98	.98	1.01
40 & above.	1.00	1.00	1.03

*Effective Oct. 11, by Continental, in North Tex.; Oct. 12, by Texas Co. in North & North Central Texas. Texas Co.'s lowest grade is 28-28.9, at $0.79; by Magnolia, Dec. 3, in N. and N. Central Texas.
†Sinclair-Prairie prices are in N. Cent. Texas and Mexia.

Jefferson County, Texas

Posted by Magnolia Petroleum Co.

Beaumont

(Effective Oct. 12, 1938)

Below 20°....	$0.79	30-30.9....	$1.08
20-20.9....	.82	31-31.9....	1.10
21-21.9....	.85	32-32.9....	1.12
22-22.9....	.88	33-33.9....	1.14
23-23.9....	.91	34-34.9....	1.16
24-24.9....	.94	35-35.9....	1.18
25-25.9....	.97	36-36.9....	1.20
26-26.9....	1.00	37-37.9....	1.22
27-27.9....	1.02	38-38.9....	1.24
28-28.9....	1.04	39-39.9....	1.26
29-29.9....	1.06	40 & above....	1.28

*For below 21°.

Oct. 11, '38, Stanolind Oil & Gas Co. posted same gravity and price schedule in West Beaumont field as Magnolia.

TEXAS FIELDS

Posted by Humble Oil & Refining Co.

**West Central Texas*

(Effective Dec. 3, 1938)

24-24.9	$0.71	33-33.9	$0.89
25-25.9	.73	34-34.9	.91
26-26.9	.75	35-35.9	.93
27-27.9	.77	36-36.9	.95
28-28.9	.79	37-37.9	.97
29-29.9	.81	38-38.9	.99
30-30.9	.83	39-39.9	1.01
31-31.9	.85	40 & above	1.03
32-32.9	.87		

*Includes Brown, Callahan, Coleman, Comanche, Eastland, Fisher, Haskell, Jones, Shackelford, Stephens, Throckmorton and Young counties.

Note: Effective Oct. 1, 1937, Humble prices are based on 100% tank tables at 60F.

**East Central Texas*

(Effective Oct. 11, 1938)

23-23.9	$0.78	32-32.9	$0.96
24-24.9	.80	33-33.9	.98
25-25.9	.82	34-34.9	1.00
26-26.9	.84	35-35.9	1.02
27-27.9	.86	36-36.9	1.04
28-28.9	.88	37-37.9	1.06
29-29.9	.90	38-38.9	1.08
30-30.9	.92	39-39.9	1.10
31-31.9	.94	40 and above	1.12

Posted by Pan American Pipe Line Co.
(Effective Feb. 15, 1939)

Cayuga, Anderson county.....$0.68
*Including Anderson, Cherokee, Limestone, Navarro counties.

PANHANDLE TEXAS

Posted by Humble Oil & Refining Co.
(Effective Dec. 3, 1938)

	Gray County	Carson-Hutchinson
28-28.9	$0.72	$0.67
29-29.9	.74	.69
30-30.9	.76	.71
31-31.9	.78	.73
32-32.9	.80	.75
33-33.9	82	.77
34-34.9	84	.79
35-35.9	86	.81
36-36.9	88	.83
37-37.9	.90	.85
38-38.9	.92	.87
39-39.9	.94	.89
40 & above	.96	.91

Effective Oct. 11, 1938, Sinclair Prairie posted same prices in Panhandle Texas as Humble posted Dec. 3. Dec. 3, Magnolia met Humble.

EAST TEXAS

Gulf, Humble, Magnolia, Sinclair Prairie, Stanolind, Texas Co., Tide-Water Associated.....$1.10
*Effective Oct. 11 by Humble, Sinclair Prairie, and Stanolind; Oct. 12 Magnolia, Texas, Tide Water; Oct. 13 by Gulf.
Oct. 12 Magnolia, Texas, Tide Water; Oct. 13 by Gulf.

NORTHEAST TEXAS

(Posted by Humble, Oct. 11, 1938)

Talco.....$0.55

(Posted by Magnolia, Oct. 12, 1938)

Cass County and Panola County, Tex.:
Same gravity and price schedule as S. O. Louisiana posts for N. La.-Ark. Crude, which see under that company.

(Posted by The Texas Co., Oct. 12, 1938)

Cass County.....$1.05

WEST TEXAS and NEW MEXICO

(a) (Effective Oct. 11, 1938 to March 24, 1939)

	Humble	Mag-nolia Stano-lind	Shell	Texas Co. Sinclair
Below 20°	$0.53	(b)	$0.53	(c)
20-20.9	.55	....	.55	....
21-21.9	.57	....	.57	....
22-22.9	.59	....	.59	....
23-23.9	.61	....	.61	....
24-24.9	.63	....	.63	....
25-25.9	.65	....	.65	.65
26-26.9	.67	.67	.67	.67
27-27.9	.69	.69	.69	.69
28-28.9	.71	.71	.71	.71
29-29.9	.73	.73	.73	.73
30-30.9	.75	.75	.75	.75
31-31.9	.77	.77	.77	.77
32-32.9	.79	.79	.79	.79
33-33.9	.81	.81	.81	.81
34-34.9	.83	.83	.83	.83
35-35.9	.85	.85	.85	.85
36-36.9	.87	.87	.87	.87
37-37.9	.89	.89	for	for
38-38.9	.91	.91	oil	oil
39-39.9	.93	.93	36° &	36° &
40 & above	.95	.95	above.	above.

Pecos County, West Texas

(Posted by Humble and Shell, Oct. 11, 1938)

Pecos.....$0.78
Yates Shallow Pool (Shell).....65

(a) Effective by Humble Oil & Refg., Shell Petroleum, Stanolind Oil & Gas, and Sinclair Prairie, Oct. 11, 1938; by Magnolia Petroleum and The Texas Co., Oct. 12, 1938. On March 24, 1939, Sinclair Prairie revised its posting from 40 & above, to 36 & above, at $0.87.

(b) Magnolia posts $0.63 for below 25; $0.65 for 25-25.9. Stanolind posts $0.65 for below 26.

(c) Texas Co. posts $0.65 for below 26; Sinclair Prairie, $0.63 for below 25.

Note: Humble's postings are in these counties: Andrews, Crane, Crockett, Ector, Gaines, Glasscock, Howard, Reagan, Upton, Winkler and Yoakum, West Texas; and Lea county, N. Mex.; Magnolia's are in Crane, Glasscock, Howard, Mitchell, Upton and Winkler; Shell, in Crane, Ector, Glasscock, Howard, Upton, Winkler, Lea; Stanolind in Hendrick field, Winkler county; Texas Co. in Ward, Winkler and Lea; Sinclair in W. Texas and Lea.

Posted by Sinclair Prairie Oil Marketing Co.
(Effective Oct. 11, 1938)

Eddy county, N. Mex.....$0.77

Posted by Continental Oil Co.
(Effective Oct. 11, 1938)

Artesia, Jackson and Maljamar pools, New Mexico: gravity schedule beginning with below 29, at $0.61; 29-29.9, at $0.63; plus 2c differential for each gravity, up to 40 & above, at $0.85.

COLORADO

Posted by Continental Oil Co.
(Effective Oct. 11, 1938)

Ft. Collins and Wellington

Below 29	$0.81	35-35.9	$0.95
29-29.9	.83	36-36.9	.97
30-30.9	.85	37-37.9	.99
31-31.9	87	38-38.9	1.01
32-32.9	.89	39-39.9	1.03
33-33.9	91	40 & above	1.05
34-34.9	.93		

Canon City and Florence, Col.....$0.90

SOUTH AND SOUTHWEST TEXAS

All Shown Below Posted by Humble Oil & Refining Co.
(Effective Oct. 11, 1938)

Carroll, Clark, Darst Creek, Hilbig, Salt Flat and Zoboroski crudes.....$0.96
Van crude.....$0.93
Conroe.....$1.27
(Effective Dec. 3, 1938)
Flour Bluff.....$1.23

Oct. 12, '38, Magnolia met Humble in Darst Creek; posted $0.87 in Luling; $0.99 in Lytton Springs; $1.14 for Cleveland, and $1.02 in Hardin, both in Liberty county, Tex.

Oct. 12, '38, The Texas Co. met Humble in Darst Creek.

**Anahuac and Dickinson*
(Effective Dec. 3, 1938)

Below 20°	$0.74	30-30.9	$1.03
20-20.9	.77	31-31.9	1.05
21-21.9	.80	32-32.9	1.07
22-22.9	.83	33-33.9	1.09
23-23.9	.86	34-34.9	1.11
24-24.9	.89	35-35.9	1.13
25-25.9	.92	36-36.9	1.15
26-26.9	.95	37-37.9	1.17
27-27.9	.97	38-38.9	1.19
28-28.9	.99	39-39.9	1.21
29-29.9	1.01	40 & above	1.23

*Includes Cedar Point, Fairbanks, Gillock, Hull, Pierce Junction and Raccoon Bend (shallow sand).

Raccoon Bend (Deep sand crude) Tomball and Satsuma
(Effective Dec. 3, 1938)

22-22.9	$0.95	27-27.9	$1.05
23-23.9	.97	28-28.9	1.07
24-24.9	.99	29-29.9	1.09
25-25.9	1.01	30-30.9	1.11
26-26.9	1.03	31-31.9	1.13

(Continued on next page)

CRUDE OIL MARKETS (*Continued from preceding page*)

32-32.9	$1.15	37-37.9	$1.25
33-33.9	1.17	38-38.9	1.27
34-34.9	1.19	39-39.9	1.29
35-35.9	1.21	40 & above	1.31
36-36.9	1.23		

Dec. 3, Magnolia met above price and gravity schedule in Tomball.

Posted by Humble

**Mirando*

(Effective Dec. 3, 1938)

Below 20°	$0.74	30-30.9	$1.03
20-20.9	.77	31-31.9	1.05
21-21.9	.80	32-32.9	1.07
22-22.9	.83	33-33.9	1.09
23-23.9	.86	34-34.9	1.11
24-24.9	.89	35-35.9	1.13
25-25.9	.92	36-36.9	1.15
26-26.9	.95	37-37.9	1.17
27-27.9	.97	38-38.9	1.19
28-28.9	.99	39-39.9	1.21
29-29.9	1.01	40 & above	1.23

*Includes Duval, Jim Hogg, Jim Wells, Webb and Zapata counties, Tex. and Heyser and Placedo crudes.

Oct. 12, '38, Texas Co. posted for Duval-Mirando, $0.77 for below 21, plus 3c differential to 26-26.9, $0.95; 27-27.9, $0.97; 28 & above, $0.99.

Dec. 3, Humble's Mirando schedule met by Magnolia.

LOUISIANA-ARKANSAS

Posted by Standard Oil Co. of Louisiana

(Effective Oct. 5, 1938)

	*N. La.-Ark.	†Columbia County, Ark.	‡South Louisiana
Below 21°	$0.73	$0.66	$0.74
21-21.9	for	for	.77
22-22.9	oil	oil	.80
23-23.9	Below	Below	.83
24-24.9	25°	25°	.86
25-25.9	$0.75	$0.68	.89
26-26.9	.77	.70	.92
27-27.9	.79	.72	.94
28-28.9	.81	.74	.96
29-29.9	.83	.76	.98
30-30.9	.85	.78	1.00
31-31.9	.87	.80	1.02
32-32.9	.89	.82	1.04
33-33.9	.91	.84	1.06
34-34.9	.93	.86	1.08
35-35.9	.95	.88	1.10
36-36.9	.97	.90	1.12
37-37.9	.99	.92	1.14
38-38.9	1.01	.94	1.16
39-39.9	1.03	.96	1.18
40 & above	1.05	.98	1.20

(Effective Oct. 5, 1938)

Smackover, Ark. $0.73

Urania, La. (Ark. Fuel Oil Co., Jan. 28, '37) $1.02

*Includes Bunkie, Caddo, Carterville, DeSoto, Homer, Haynesville, Rodessa, Sabine and Sarepta, in N. La.; El Dorado and Miller County, Ark. (latter is Ark. part of Rodessa field).

Note: S. O. Louisiana prices in all La.-Ark. fields, effective Oct. 5, 1938, are on 100% tank table basis.

†Includes Buckner, Magnolia, and Village pools.

‡Includes these fields: Baton Rouge, Bayou, Choctaw, Cheneyville, Darrow, Jeanerette, Lirette, N. Crowley and Roanoke.

Posted by Continental Oil Co.

(Effective Oct. 11, 1938)

Tepetate and Ville Platte, La. $1.03

(Effective Jan. 1, 1939)

Abbeville, La.

Below 36	$0.92	38-38.9	$0.98
36-36.9	.94	39-39.9	1.00
37-37.9	.96	40 & above	1.02

Oct. 12, 1938, Magnolia Petroleum and The Texas Co. posted same gravity and price schedule as S. O. La. posts in N. La.-Ark. in these fields: Magnolia, in Bull Bayou, Cotton Valley, Haynesville, Pine Island, and Rodessa, La., and Eldorado and Rainbow, Ark.; Texas Co. in N. La. Both also met S. O. La. in Smackover. Texas Co. posted $1.24 for Garden Island, La. and $1.04 for Lafitte, La.

*GULF COASTAL FIELDS

Posted by Humble Oil & Refining Co.

†(Effective Oct. 11, 1938)

Below 20	$0.79	30-30.9	$1.08
20-20.9	.82	31-31.9	1.10
21-21.9	.85	32-32.9	1.12
22-22.9	.88	33-33.9	1.14
23-23.9	.91	34-34.9	1.16
24-24.9	.94	35-35.9	1.18
25-25.9	.97	36-36.9	1.20
26-26.9	1.00	37-37.9	1.22
27-27.9	1.02	38-38.9	1.24
28-28.9	1.04	39-39.9	1.26
29-29.9	1.06	40 & above	1.28

Polk County, Tex.

(Posted by Shell Petroleum Corp.)

Livingston Area (Effective Oct. 11, '38) $1.10

Schwab Area (Effective Feb. 20, '39) 1.00

†Effective Dec. 3, 1938, gravities up to 45 & above discontinued in Refugio, Saxet, Greta, O'Connor-McFadden, Taft, Plymouth and Tom O'Connor fields.

*Humble's prices apply in these Texas fields: Amelia, Clear Lake, Goose Creek, Mykawa, Sugarland, Thompsons, Webster and West Columbia; also Refugio, Saxet, Greta, O'Connor-McFadden, Taft, Plymouth and Tom O'Connor fields.

Oct. 11, 1938, Stanolind posted in Clinton, Hastings, High Island, So. Houston, and Spindletop, same prices as Humble in Texas Gulf Coast fields, except that Stanolind's lowest grade is below 21, at $0.82.

Oct. 12, 1938, The Texas Co. posted for Texas & La. Gulf Coast crude: $0.82 for below 21 plus 3c to 26-26.9, which is $1; from there on, 2c, to 34 & above, which is $1.16. In Refugio, same as other Gulf Coast, except highest gravity is 28 & above, $1.04.

Effective Oct. 11, 1938, Sinclair Prairie met Humble's Gulf Coast price & gravity schedule.

ROCKY MOUNTAIN FIELDS

Posted by Stanolind Oil & Gas Co.

(Effective Oct. 11, 1938)

Salt Creek, (except Tensleep crude), Midway and Dutton Creek, Wyo., same schedule as Stanolind posts in Oklahoma-Kansas, ranging from $0.86 to $1.10, which see under Mid-Continent crude on previous page.

Tensleep, Salt Creek field	$0.646
Iles, light, Col.	0.98
Iles, heavy	0.92
Elk Basin, light	0.90
Grass Creek, light	0.90
Frannie light	0.55
Grass Creek, heavy	0.40
Hamilton Dome, Wyo.	0.35
Frannie heavy	0.42

Posted by Ohio Oil Co.

(Effective Oct. 11, 1938)

Elk Basin, Wyo.	$0.90
Grass Creek, light	0.90
Rock Creek	1.00
Lance Creek	0.77
Dry Creek, Mont.	0.92

(Effective May 1, 1938)

Grass Creek, heavy $0.50

(Effective Nov. 16, 1937)

Sunburst, Mont. $0.90

Posted by Continental Oil Co.

(Effective Oct. 11, 1938)

Cat Creek, Mont.	$1.10
Big Muddy, Wyo.	0.98
Lance Creek, Wyo.	0.77

CALIFORNIA, *Posted by Standard Oil of California*

All gravities above those quoted take highest price offered in the field. Prices effective Feb. 26, 1936, except Huntington Beach, Playa del Rey, Santa Fe Springs, Kern Front, Signal Hill (Long Beach) effective March 7, 1936; Elk Hills effective June 22, 1936; Lakeview Area, Aug. 19, 1936; El Segundo and Wilmington, Oct. 15, 1937; Greeley-Canal, July 9, 1938; Santa Maria Valley, by Union Oil, Oct. 15, 1938.

Gravity	Signal Hill (Long Beach) El Segundo †Wilmington	Seal Beach	Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda Brea Canon	Athens Rosecrans	Dominguez	Torrance	Richfield	Whittier East Coyote (La Habra)	Montebello	West Coyote Hills	Santa Fe Springs	‡Newhall and others	Mountain View	Elk Hills	Buena Vista Hills Midway-Sunset Lakeview Area	Greeley-Canal (Kern County)	Lost Hills	Coalinga	Wheeler Ridge	Santa Maria (Union Oil)
13-13.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	$0.63
14-14.9	$0.80	$0.79	$0.74	$0.78	$0.79	$0.80	$0.76	....	....	$0.80	$0.76	$0.76	$0.77	$0.78	....	$0.70	....	$0.70	$0.70	....	$0.70	$0.70	....	.65
15-15.9	.80	.79	.74	.78	.79	.80	.76	....	....	.80	.76	.76	.77	.78	....	.70	....	.70	.70	....	.70	.70	....	.68
16-16.9	.80	.79	.74	.78	.79	.80	.76	....	....	.80	.76	.76	.77	.78	....	.70	....	.70	.70	....	.70	.70	....	.70
17-17.9	.80	.79	.74	.78	.81	.80	.76	....	....	.80	.76	.76	.77	.78	....	.70	....	.70	.70	....	.70	.70	....	.70
18-18.9	.80	.79	.74	.78	.84	.80	.78	....	....	.82	.76	.76	.77	.78	....	.70	....	.70	.70	....	.70	.70	....	....
19-19.9	.82	.79	.74	.82	.87	.84	.81	....	....	.85	.76	.78	.77	.78	....	.70	.70	.74	.74	....	.74	.71	.70	....
20-20.9	.85	.79	.74	.85	.90	.88	.84	....	....	.88	.78	.82	.77	.80	....	....	.70	.78	.78	....	.78	.72	.70	....
21-21.9	.88	.79	.74	.89	.93	.93	.88	....	....	.91	.80	.85	.77	.84	.78	....	.73	.82	.82	....	.82	.74	.70	....
22-22.9	.92	.82	.74	.92	.96	.98	.92	....	....	.93	.84	.89	.79	.88	.78	....	.77	.87	.87	....	.86	.78	.72	....
23-23.9	.95	.86	.77	.96	.99	1.02	.96	.84	.79	.96	.88	.93	.82	.92	.78	....	.80	.92	.92	....	.90	.82	.76	....
24-24.9	.99	.91	.80	1.00	1.02	1.06	.99	.88	.81	.99	.91	.96	.85	.96	.82	....	.84	.97	.97	....	.94	.86	.79	....
25-25.9	1.03	.95	.82	1.03	1.05	1.11	1.03	.93	.83	1.02	.95	....	.89	.99	.86	....	.88	1.01	1.01	....	.98	.90	.83	....
26-26.9	1.06	1.00	.85	1.07	1.09	1.16	1.06	.98	.86	1.05	.98	....	.92	1.03	.90	....	.91	1.06	1.06	....	1.02	....	....	....
27-27.9	1.10	1.05	.88	1.11	1.12	....	1.10	1.03	.88	....	1.02	....	.96	1.06	.95	....	.95	1.10	1.10	$0.91	1.06	....	....	....
28-28.9	1.14	1.10	.90	1.14	1.15	....	1.14	1.07	.90	....	1.06	....	.99	1.10	.99	....	.99	1.15	1.15	.94	1.10	....	....	....
29-29.9	1.17	1.15	.93	1.18	1.18	....	1.17	1.12	.93	....	1.09	....	1.03	1.14	1.03	....	1.02	1.20	1.20	.98	1.14	....	....	....
30-30.9	1.21	1.19	.95	1.22	1.21	....	1.21	1.17	.95	....	....	....	1.07	1.17	1.08	....	1.06	1.25	1.25	1.02	1.18	....	....	....
31-31.9	....	....	....	....	1.24	....	1.24	1.22	.97	....	....	....	1.11	1.21	1.12	....	1.09	1.29	1.29	1.06	....	....	....	....
32-32.9	....	*Ellwood Terrace	....	....	1.27	....	1.27	1.27	1.00	....	....	....	1.14	1.25	1.16	....	1.13	1.34	1.34	1.09	Kettleman Hills			
33-33.9	....	1.28	....	....	....	....	....	1.32	....	....	....	....	1.18	1.28	1.20	....	1.17	1.38	1.38	1.13	....	1.19	....	....
34-34.9	....	1.32	....	....	....	....	....	1.37	....	....	....	....	1.22	1.32	1.25	....	1.20	....	....	1.17	....	1.23	....	....
35-35.9	....	1.35	....	....	....	....	....	1.42	....	....	....	....	1.25	....	1.29	....	....	....	....	1.20	....	1.27	....	....
36-36.9	....	1.39	....	....	....	....	....	1.46	....	....	....	....	1.29	....	1.33	....	....	....	....	1.24	....	1.31	....	....
37-37.9	....	1.43	....	....	....	....	....	1.51	....	....	....	....	1.32	....	1.37	....	....	....	....	1.28	....	1.35	....	....
38-38.9	....	....	....	....	....	....	....	1.56	....	....	....	....	1.36	....	1.42	....	....	....	....	1.31	....	1.39	....	....
39-39.9	....	....	....	....	....	....	....	1.61	....	....	....	....	1.40	....	....	....	....	....	....	1.35	....	1.43	....	....
40-40.9	....	....	....	....	....	....	....	1.66	....	....	....	....	1.43	....	....	....	....	....	....	1.39	....	....	....	....
41-41.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.43	....	....	....	....
42-42.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.46	....	....	....	....
43-43.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.50	....	....	....	....
44-44.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.54	....	....	....	....
45-45.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.57	....	....	....	....
46-46.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.61	....	....	....	....
47-47.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.65	....	....	....	....
48-48.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.68	....	....	....	....

F.O.B. Standard Pipe Line

*F. o. b. ship.

‡Also McKittrick, Kern River. Kern Front and Round Mountain $0.70 thru 19.9 gravity; no higher gravity quoted.

†Wilmington prices differ on gravities below 18.9. Prices are: 14-16.9, $0.75; 17-17.9, $0.77; and 18-18.9, $0.79; rest of schedule same as Signal Hill.

Index to Advertisers

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Alemite Corp.
American Flange & Mfg. Co.
American Telephone & Telegraph Co.
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Blackmer Rotary Pump Co.
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Brodie Co., Inc., Ralph N.
Buckeye Iron & Brass Works
Butler Manufacturing Co.

Canfield Oil Co.
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Conewango Refg. Co. 33
Curtis Pneumatic Machinery Co.

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Electric Storage Battery Co.
Erie Meter Systems, Inc.
Ethyl Gasoline Corp.
Exide Batteries

Flexible Metal Hose & Tubing Institute
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Hygienic Products Co.

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Neptune Meter Co. Third Cover
New York Lubricating Oil Co.

Overhead Door Corp.
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Paratac
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Pennsylvania Grade Crude Oil Assoc. 2
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Petroleum Marketers Co.
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Pittsburgh Equitable Meter Co.
Pure Oil Co.

Republic Oil Co.
Roper Corp., Geo. D.
Rotary Lift Co. 1

Service Station Equip. Co.
Shand & Jurs Co.
Shell
Silvertown Tires
Sinclair Refg. Co., Inc.
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Southwest Pump Co.
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Stewart-Warner Corp.
Sun Oil Co. Fourth Cover

Texaco Development Co. 27
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Union Metal Mfg. Co.
U. S. Steel Co.
Universal Oil Products Co. 23

Viking Pump Co.

Wheaton Brass Works, A. W. 24-25
Wheeling Corrugating Co.
Witte Engine Works

California Standard Cancels Discounts To "Split" Dealers in California

SAN FRANCISCO—Standard Oil Co. of California canceled, effective March 18, the discount it has been giving off posted tank wagon prices to "split" dealers in California on all motor gasolines. These discounts to "split" dealers had been: 2 cents per gallon on Standard Ethyl, Standard Gasoline (regular-grade), and Flight (third-grade) gasoline; and on Stanavo Aviation, 3 cents, all off tank wagon price.

Similar discounts to this class of trade in the rest of territory had been discontinued last July.

CLASSIFIED

Situations Open

EXPERIENCED ACCOUNTANT

Independent company headquarters in Florida—to take complete charge of books and prepare Federal and State Tax reports. State age, nationality, education, record of employment with duties, salaries and references.

Address Box 102

SALES AND ADVERTISING PROMOTION MAN WANTED

Preferably one who has had experience with sales and advertising promotion in the oil industry, particularly through the middle west. He should have created sales and advertising himself and also spent time in the field contacting jobbers, major company managers and agents and dealers.

The company inserting this advertisement is not an oil company but is directly allied with the oil business and is a first class, responsible organization.

Please give information as to experience and training in order to permit intelligent preliminary consideration and thus avoid unnecessary correspondence. No personal interviews will be given.

Address Box 105
National Petroleum News

For Sale

FOR SALE: One Fruehauf trailer and one five-compartment, 1001-gallon capacity tank. One Ford chassis and one four-compartment, 576-gallon capacity tank. Address Box 104, National Petroleum News.

PENNSYLVANIA REFINERY

Sacrifice Sale

For Quick Disposal

Location northwestern Pennsylvania. Capacity 1500 barrels crude daily. Modern pipe still distillation unit. Percolation filter plant complete with Herschoff burner, cold settling bright stock and wax press, neutral equipment, good boiler plant, excellent water supply, ample storage. Could be placed in operation in seventy-two hours. Ideal location for refining Illinois Crude where now located or can be moved. Will consider selling any part.

Box 481, Kane, Pennsylvania

Wanted to Buy

WANT TO BUY: 800 gallon truck tank. Give full information and photograph in first letter. Address Box 103, National Petroleum News.

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Miscellaneous

WHAT IT COSTS

"For Sale," "Wanted to Buy," "Help Wanted," "Business Opportunities," "Miscellaneous" classifications, set in type this size without border — 10 cents a word. Minimum charge, $3.00.

"Position Wanted"—5 cents a word. Minimum charge $1.00.

Advertisements set in special type or with border—$4.00 per column inch.

Copy must reach us not later than Saturday preceding date of issue.

All advertisements carried on this page are payable in advance.

"STRICTLY PERSONAL"

Robert J. Fellingham, a general attorney for Standard Oil Co. of Indiana, was retired on company annuity April 1 after 21 years' service. Business associates honored him March 31 at a banquet at the Bismarck Hotel in Chicago.

* * *

Wilson S. Delzell, Stevens Point, Wis., the Delzell Oil Co., has been appointed a regent of the state teacher's college at Stevens Point by Gov. Julius P. Heil.

* * *

Transfer of two division managers for Phillips Petroleum Co. to positions in the headquarters offices in Bartlesville, Okla. has been announced by **Frank Phillips,** chairman of the board.

E. J. Webster leaves his division managership at Kansas City, Mo. to become assistant to **A. M. Hughes,** vice president in charge of sales. He will be succeeded at Kansas City by **Leo Barry** who has been his assistant.

D. M. McBride leaves his Omaha, Neb. division managership to become director of sales research. **F. O. Nordstrom,** his assistant at Omaha, steps up to managership at that place.

* * *

W. A. Martin, district landman for the Texas Co., with headquarters at Wichita, has been named district land and lease man for the Illinois, Indiana and Kentucky area with headquarters at Mattoon, Ill. He succeeds J. W. Russell who has resigned to become an independent operator.

* * *

Five Tulsa oil men and two Bartlesville, Okla. men are on the technical committee that has been appointed to prepare the program for pipeline day at the Oil-World Exposition at Houston next month. Tulsans are **W. R. Finney,** president, and **F. E. Warterfield Jr.,** chief engineer, Oklahoma Pipe Line Co.; **C. F. Guinn,** Tidal Pipe Line Co.; **W. G. Heltzel** and **J. C. Stirling,** Stanolind Pipe Line Co. Those from Bartlesville are **A. H. Horne,** Empire Pipe Line Co., and **E. F. Kindsvater,** Phillips Petroleum Co.

* * *

Robert B. Curran, chief scout for the Carter Oil Co., has resumed his regular duties after being detailed for a time to a special task in the crude oil marketing division of the company. **Cliff Savage**, chief scout of the company's eastern division, is returning to Illinois. He was called to the Tulsa office to handle the scouting department while Curran was on special assignment.

* * *

The nominating committee has been elected preparatory to election of new officers of the Engineers Club of Tulsa. The committee is composed of **A. J. Kerr,** vice president of Midwest Equitable Meter Co., chairman; **W. F. McMurry,** superintendent of the Tulsa water department, and **D. L. Trax,** superintendent of materials and equipment for Gulf Oil Corp., **Dean R. L. Langenheim,** engineering department, University of Tulsa, and **C. D. Watson,** assistant to the president of the Carter Oil Co.

* * *

Terminating a quarter of a century of affiliation with Union Oil Co. of California, **R. D. Matthews,** executive vice president and director, has tendered his resignation to take effect immediately. In accepting "with regret" this resignation, **L. P. St. Clair,** chairman of the Union directorate, expressed appreciation for the valued service Matthews rendered to the company.

* * *

W. B. Wylie, executive secretary of the Retail Petroleum Dealers Ass'n. of California, will attend the the spring meeting of the National Ass'n. of Petroleum Retailers board of directors in Milwaukee, April 5 and 6. Before returning to the coast, Wylie will address a mass meeting of dealers in Chicago at the request of **C. E. Ragan,** president of the Gasoline Retailers Ass'n.

* * *

Dewitt Knox, secretary and treasurer of Macmillan Petroleum Corp., is heading up the Independent Refiners Ass'n. of California, following the recent resignation of **W. H. Morgan** who continues as a member of the organization's board of directors.

* * *

John F. O'Donohoe of Wichita Falls, Texas, president of the Petroleum Producers Co., is the new president of the North Texas Oil & Gas Association. He first came to Texas in 1909 from Mississippi as an oil scout. He is a former president of the Mid-Continent Oil & Gas Association of Texas.

Other new officers of the North Texas association are: **J. H. S. Bonner,** of the Bonner Oil Co., vice president; **John W. Thomas,** of the Deep Oil Corp., second vice president. **D. G. Gray** was re-elected executive vice president.

* * *

A. F. Cook, for the past 10 years assistant advertising manager of the Philgas Dept. of the Phillips Petroleum Co., Detroit, has been appointed advertising manager of the Assn. of Gas Appliance and Equipment Manufacturers, New York.

Norval F. Myers, manager of refineries for Union Oil Co. of California, Los Angeles, has been appointed to membership on the A.P.I. Division of Refining committee on corrosion of refinery equipment. He succeeds L. G. Metcalf, manager of manufacturing for the same company.

* * *

Claude V. Barrow, oil editor for the "Daily Oklahoman," Oklahoma City, has spent several days in Tulsa gathering data in connection with that paper's 50th anniversary edition in April. The issue will be published on anniversary of the opening of the then Indian Territory for settlement, the "Oklahoman" having been started on that day.

* * *

S. P. Pickett, technologist, and **C. O. Blackburn,** chemist of Shell Oil Co., recently were honored by the chemical warfare division of the U. S. Reserve Corps. Pickett was one of two chosen from the Ninth Corps area for three months' training at Edgewood Arsenal, near Baltimore. Blackburn was promoted from captain to major in the chemical warfare reserve.

* * *

C. McLaughlin, distributing salesman for Shell Oil Co. in the San Francisco district, retired in February after 24 years of continuous service with the company. He was one of the few remaining salesmen who, in former years, delivered Shell products with a two-horse team.

* * *

Effective March 1, **R. M. Morrison,** formerly assistant purchasing agent for The Texas Co. of California, became district purchasing agent of The Texas Corp., with headquarters in New York.

* * *

Johnston de Forest has been elected to the directorate of Tide Water Associated Oil Co., filling the vacancy caused by death of his uncle, **Henry W. de Forest,** several months ago.

* * *

Horace C. Fitzpatrick, assistant to the chairman of the board of the Sinclair-Prairie Oil Co., has resigned effective April 15. He will be associated with **John Mabee,** head of the Mabee Consolidated Corp., Tulsa, in a drilling contracting firm to be organized with headquarters in Houston. Fitzpatrick has been connected with the Prairie and then the Sinclair Prairie interests for the past 25 years.

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There is every reason in the world why you should now benefit by what Chevrolet has to offer in the way of better trucks, greater truck economy, and wide range of models covering every possible truck requirement.

Because, in 1939 Chevrolet is in a better position to meet your hauling needs—whatever they are—than at any other time in Chevrolet history. All the way from smart, speedy delivery trucks to massive heavy-duty units of 14,000 pounds gross rating, Chevrolet offers 45 models . . . eight different wheelbases . . . and an amazing variety of factory-built bodies.

This is a good time to take advantage of Chevrolet dependability and economy—qualities which have made Chevrolet the nation's largest builder of trucks.

CHEVROLET MOTOR DIVISION, *General Motors Sales Corporation*, DETROIT, MICHIGAN
General Motors Instalment Plan—convenient, economical monthly payments. A General Motors Value.

CHEVROLET

MASSIVE NEW SUPREMLINE TRUCK STYLING . . . COUPE-TYPE CABS . . . VASTLY IMPROVED VISIBILITY • FAMOUS VALVE-IN-HEAD TRUCK ENGINE • POWERFUL HYDRAULIC TRUCK BRAKES (Vacuum-Power Brake Equipment optional on Heavy Duty models at additional cost) • FULL-FLOATING REAR AXLE on Heavy Duty models only (2-Speed Axle optional on Heavy Duty models at additional cost)

L. B. Simmons • • •

● The boom days of the Burkburnett oil field in north Texas brought L. B. Simmons, newly elected president of the Western Petroleum Refiners Assn., into the oil industry.

Leaving his position as assistant general freight agent for the Fort Worth & Denver City Railway Co., with headquarters at Fort Worth, Mr. Simmons moved to Wichita Falls, Tex., in 1918 and became interested in a small skimming plant, after a venture in the producing branch of the industry.

The refining branch appealed to him, however, and in 1921 he moved to Duncan, Okla., and organized the Rock Island Refining Co., of which he is president. From a small skimming plant the company's refining department has grown to a 6500 barrel skimming and cracking plant.

The refinery has been in continuous operation since it was first put on stream back in 1921, the only shutdown being for temporary repairs and even then not all of the fires were extinguished.

In the course of the years subsidiary companies were formed until today Mr. Simmons, in addition to being president of the Rock Island Refining Co., also is president of the Rock Island Oil Co., the Duncan Oil Co. and the Rocket Oil Co.